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# **NAVAL POSTGRADUATE SCHOOL**

**MONTEREY, CALIFORNIA**

## **THESIS**

**ACTIVE DUTY FEMALE MILITARY'S EXPERIENCE OF  
FEAR, EMBARRASSMENT, AND DISTRESS DURING  
PELVIC EXAMINATIONS**

by

April D. Bakken

March 2011

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**ACTIVE DUTY FEMALE MILITARY'S EXPERIENCE OF FEAR,  
EMBARRASSMENT, AND DISTRESS DURING PELVIC EXAMINATIONS**

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Submitted in partial fulfillment of the  
requirements for the degree of

**MASTER OF SCIENCE IN OPERATIONS RESEARCH**

from the

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## **ABSTRACT**

Previous research indicates that among civilians and female veterans, a history of sexual violence is associated with negative experiences with gynecological care. We attempt to extend these findings to active duty female U.S. military officers. We hypothesize that in this population (1) sexual violence history status predicts emotional reactions to the pelvic examination; (2) that this relationship is mediated by military rank; and (3) recollections of the first pelvic examination are correlated with reactions to the most recent pelvic examination.

Sixty participants completed an online survey, consisting of six questionnaires tapping attitudes and reactions to gynecological care, history of trauma, recommendations, and demographic information.

There is insufficient statistical evidence to support either a relationship between sexual violence history and reaction to the most recent pelvic examination, or that rank mediates this potential relationship. However, there is strong evidence that the first pelvic examination experience was positively associated with the most recent pelvic examination experience. Participants, regardless of sexual violence status, reported stronger reactions to the first pelvic examination than to the most recent examination.

The results are not consistent with previous work for several possible reasons including the definition of sexual violence, the role of Post-Traumatic Stress Disorder, and homogeneity of the sample.



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## **LIST OF ACRONYMS AND ABBREVIATIONS**

AFB	Air Force Base
ASVAB	Armed Service Vocational Aptitude Battery
GYN	gynecological
HPV	human papillomavirus
HxSV	History of Sexual Violence
IED	improvised explosive device
IRB	Institutional Review Board
LEEP	loop electrosurgical excision procedure
MEPS	Military Entrance Processing Station
PA	Physician Assistant
PTSD	posttraumatic stress disorder
SD	standard deviation
SHARP	Sexual Harassment/Assault Response and Prevention
STD	sexually transmitted disease
U.S.	United States



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## **I. INTRODUCTION**

This research is based on an online survey of active duty female U.S. military officer students at a military graduate school. We attempt to replicate findings associated with prior studies investigating the relationship between a history of sexual violence and experiences with gynecological care. Prior studies on this topic focus on the female civilian and veteran populations. These studies reveal an association between the history of sexual violence (particularly when post-traumatic stress disorder [PTSD] is present) and greater distress, embarrassment, and fear during the pelvic examination (Weitlauf et al., 2010). This present study expands the existing literature on this topic by focusing on the reactions of active duty U.S. military women to the pelvic examination.

### **A. BACKGROUND**

Previous research indicates that among female service members, including active duty military and veterans, the experience of sexual violence is common (Dobie et al., 2004; Wolfe et al., 1998; Kimerling et al., 2006; Kimerling, Gima, Smith, Street, & Frayne, 2007; Suris, Lind, Kashner, & Borman, 2007; Suris & Lind, 2008; Fontana & Rosenheck, 1998). In this context, sexual violence refers broadly to the experience of one or more of the following: (1) verbal and/or physical sexual harassment; (2) attempted sexual assault, or the attempt to force sexual contact against one's will; or (3) penetrative sexual assault, or unwanted sexual intercourse (Dobie et al., 2004, Wolfe et al., 1998, Kimerling et al., 2006, 2007, Suris et al., 2007, 2008, Fontana & Rosenheck, 1998). It should be noted that for most participants in the studies described above, a history of sexual violence, includes exposure to more than one type of sexual violence, with a majority of participants experiencing penetrative sexual assault at some time during their lifetime (Weitlauf et al., 2008; 2010). In the present work, a history of sexual violence is defined as any exposure during one's lifetime to uninvited and unwanted sexual attention (e.g., touching or cornering, pressure for sexual favors), use of

force or the threat of force to have sex against the woman's will, or being sexually assaulted or touched in a sexual way by a person five or more years older than the victim when the victim is below the age of 13.

### **1. Sexual Violence While on Active Duty**

It is well known that sexual violence is commonly experienced by women serving in the U.S. military (Dobie et al., 2004; Fontana & Rosenheck, 1998; Kimerling et al., 2006, 2007; Weitlauf et al., 2008, 2010). For example, an article in *The New York Times Magazine* (Corbett, 2007) indicates that of the more than 160,000 women that have been deployed to Iraq and Afghanistan, 2,374 women have reported being sexually assaulted, harassed, and/or raped by fellow service members. Policymakers and military officials have been attempting to address these issues by implementing reporting strategies and/or ramping up military-wide sexual harassment education and training, such as mandatory annual Sexual Harassment/Assault Response and Prevention (SHARP) training in the U.S. Army. All branches of service have similar programs that conduct the same type of training. Research specifically focusing on this issue finds annual rates of experiencing sexual assault at 3%, sexual coercion at 8%, and sexual attention at 27% among active duty female military personnel (Kimerling et al., 2007) compared to a sample of civilian American women, of whom 23% reported a sexual or physical crime (Resnick et al., 1993).

While in the military, victims of sexual violence often have to continue to interact professionally on a daily basis with the individual that attacked them. This interaction can lead to an increase of the victim's distress and, subsequently, their revictimization. Due to the military's need for unit cohesion, an individual may feel the need to suppress personal issues and challenges for the greater good of the unit. Consequently, victims are encouraged to keep silent about their experiences, have their reports ignored, or blamed by others for the sexual assault (Corbett, 2007); all of which may indicate that rates of sexual assault among active duty female military personnel are higher than what is reported above (Kimerling et al., 2007). In sum, exposure to sexual violence during

military service has been widely documented. However, high rates of exposure to sexual violence prior to entry into military service (e.g., childhood sexual abuse) have also been found (Merrill, 1999).

## **2. Sexual Violence Prior to Military Service**

According to research done on 1,887 female Navy recruits, 35% have been raped, and 57% report that they have experienced childhood physical and/or sexual abuse (Merrill, 1999). Tragically, prior exposure to sexual violence increases the chances of revictimization (Cloitre, Tardiff, Marzuk, Leon, & Portera, 1996, Cloitre, Scarvalone, & Difede, 1997; Rich, Combs-Lane, Resnick, & Kilpatrick, 2003). Female Navy recruits who were raped during adulthood are 4.8 times more likely to have had experiences of childhood sexual abuse than women who had not been sexually abused as children (Merrill et al., 1999).

Research indicates that the women who report being assaulted in both childhood and adulthood also report significant difficulties in self and interpersonal functioning. These issues, which seem to come from the abuse they received as a child, may be mediators contributing to their increased risk of the reoccurrence in adulthood (Cloitre et al., 1997). Thus, unfortunately, chronic exposure to sexual violence, even during one's post-military civilian life also remains a key concern for many female service members and veterans.

## **3. History of Sexual Violence Associated With Physical and Mental Health Issues**

Exposure to sexual violence has long been associated with serious mental health problems such as depression, PTSD, anxiety disorders, and substance abuse (Foa & Rothbaum, 1991; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993; Kimerling et al., 2006, 2007; Kessler et al., 1995). A woman's immediate reaction to sexual violence often features the same behavioral, cognitive, and physical characteristics as PTSD (Foa et al., 1991); indeed, sexual violence is a leading precursor to PTSD in women (Foa et al., 1991; Resnick et al., 1992; Kimerling et al., 2006, 2007). Kessler et al., (1995) analyze a subset of data from the National Comorbidity Survey, the first nationally representative

face-to-face general population survey, to assess a broad range of disorders identified in the Diagnostic and Statistical Manual of Mental Disorders. They find that 51.2% of women report at least one traumatic event. A significantly higher proportion of women studied report rape (9.2%) and sexual molestation (12.3%) than men, respectively, at 0.7% and 2.8% (Kessler et al., 1995). Of the listed traumas, rape is most strongly associated with PTSD assessment.

Exposure to sexual violence is also associated with a host of medical issues, ranging from chronic pain to immunological disorders (Sadler, Booth, Nielson, & Doebbeling, 2000; Frayne, Skinner, Sullivan, & Freund, 2003; Letourneau, Holmes, & Chasedun-Roark, 1999). Additionally, pathological health conditions resulting from a disease, injury, or other trauma (e.g., uninvited and unwanted sexual attention, use of force or threat of force to have sex against their will) may be magnified among female veterans, mainly due to the number of issues uniquely associated with military settings, which may increase the effect of this experience (Kimerling et al., 2007). Kimerling et al., (2007) finds that PTSD, as well as other mental and medical issues, is strongly associated with sexually traumatized military patients and concludes that these patients may not disclose that they have been sexually victimized unless asked. These findings lead to a broader awareness (among physicians) of sexual violence issues commonly faced by female military and veteran personnel, along with guidelines for the treatment and referral of sexual violence in health care affecting this population (Kimerling et al., 2007). Importantly, these findings are based on civilian and veteran females; very little is known about the relationship between sexual violence and pathological health conditions among active duty female military personnel. Based on the results by Kimerling et al., (2007) described above, combined with a military culture in which the focus is on training for war and defending the United States (which tends to deemphasize personal issues), it is likely that those active duty female military personnel who have a history of sexual violence also may experience serious mental and physical health conditions that can undermine their ability to perform their duties.

In particular, women with a history of sexual violence may face increased risk of developing gynecological complications. A small empirical literature documents an

increase in gynecological complaints among women, including veterans, with a history of sexual violence (Frayne et al., 2003). In particular, an increase in the rates of sexually transmitted infections, including human papillomavirus (HPV) (Letourneau et al., 1999; Reynolds, Peipert, & Collins, 2000), are reported among sexual violence victims. Of note, the onconogenic strains of HPV are a primary risk factor for the development of cervical disease (Bedford, 2009). This is cause for concern, as women with a history of sexual violence may also receive less consistent screening for cervical cancer (Farley et al., 2002). Thus, sexual violence may greatly increase risk for the development of cervical cancer in women as risk for infection with HPV may be elevated and opportunities for screening may be diminished.

#### **4. Pelvic Examinations Are Good Screening for Cervical Cancer**

Routine screening in women with high risk of exposure to HPV, such as women with a history of sexual violence, is needed for optimal surveillance of cervical cancer precursors. Timely receipt of screening is the pathway to early detection and intervention (Sawaya, 2009). Currently, women are encouraged to receive annual pelvic examinations, which include Pap smears to screen for cervical cancer conducted as part of regular gynecological care, as one effective method of screening for cervical cancer.

#### **5. Some Evidence Indicates That Women With a History of Sexual Violence Find Examination Distressing**

Because female service members as a group have greater exposure to sexual violence than do their civilian peers, routine screening for cervical cancer is a paramount priority for their preventive health care (Farley et al., 2002; Weitlauf et al., 2010). Regardless of their increased need for regular screening, there are many reasons to believe that women with prior exposure to sexual violence, including female military personnel and veterans, may be at risk for less regular gynecological care (Farley et al., 2002; Weitlauf et al., 2010).

A study by Farley et al., (2002) suggests that women who were sexually abused as children are less likely to have a Pap smear within the prior two years than those without



this history (36.0% compared to 50.6%). This results in less cervical cancer screening and, consequently, an increased risk of not detecting the disease at a treatable stage in this population of women.

Of most relevance to the current study is work by Weitlauf et al. (2008), who set out to estimate the range and severity of distress and pain during pelvic examinations among female veterans with and without a history of sexual violence. Because the Weitlauf et al. (2008) study specifically examines the relationship between history of sexual violence and reactions to the pelvic exam among female veterans, their study serves as the basis for the current study. Weitlauf et al. (2008) administered questionnaires to assess the history of sexual violence and experiences of distress and pain associated with the pelvic examination. Distress associated with the pelvic examination for women with a history of sexual violence has a median of 2.44 (on a scale of 0 to approximately 8, the 25th and 75th percentiles being 0 and approximately 4.5), while women without a sexual violence history had a median of 0. Higher ratings of pain are also found among women with sexual violence (median 2.5) compared to those without (median 0). Of note, women with a history of both sexual violence and PTSD reported the highest levels of distress. Weitlauf et al. (2008) study concluded that distress and pain during the examination could be possible indicators of a history of sexual violence. Weitlauf et al. (2010) found that among women with a history of sexual violence and who experienced discomfort during the pelvic examination, their misunderstanding or low coping skills of the pelvic examination procedure could be a contributor to their discomfort with the process. Thus, they emphasize that this population of women needs more sensitive care during pelvic examinations. Their findings also highlight the need to educate the provider.

One explanation for this risk of not receiving timely gynecological care is that the pelvic examination associated with cervical cancer screening can be emotionally challenging for women with a history of sexual violence, particularly those with PTSD (Robohm & Buttenheim, 1996; Weitlauf, et al., 2008; 2010). Specifically, the pelvic examination may cue painful memories of prior assault for some women (Robohm & Buttenheim, 1996; Weitlauf, et al., 2008; 2010). Thus, it is not surprising that recent

work suggests that these women are more likely to experience pain and discomfort during the pelvic examination associated with cervical cancer screening examination (Hilden, Sidenius, Langhoff-Roos, Wijma, & Schei, 2003; Weitlauf et al., 2008; 2010). Though no research has yet suggested that these traumatic reactions to the pelvic examination prompt intentional avoidance of future screening, the potential for these reactions to contribute to problems with adherence is clear.

In summary, extensive research indicates that: (1) rates of sexual violence among female military personnel is higher than that of female civilians; (2) history of sexual violence is associated with a myriad of mental and medical health problems; (3) sexual violence increases the risk of HPV, which in turn increases the risk of cervical cancer; and (4) regular pelvic examinations provide good screening for cervical cancer. There also is preliminary evidence to suggest that women with a history of sexual violence have more negative experiences with the pelvic examination. Negative experiences with pelvic examination may lead to lack of adherence in receiving regular gynecological care. Notably, this information primarily has been gathered based on female civilians and veterans. Thus, knowledge about active duty female military's experiences with pelvic examinations, and gynecological care in general, is sadly lacking. In particular, no study to date has investigated the relationship between history of sexual violence and experiences with pelvic examinations among active duty female military personnel.

## **B. GAPS IN KNOWLEDGE**

Very little is known regarding the experiences of active duty female military personnel with recent gynecological care, particularly those at risk for cervical cancer due to a history of sexual violence. In this section, more specific gaps of knowledge regarding active duty female military personnel, history of sexual violence, and reactions to the pelvic examinations are described.

### **1. Mediators of History of Sexual Violence and Reactions to the Pelvic Exam**

Among active duty female military personnel, the relationships between sexual violence history and experiences with the pelvic examination are likely confounded by a

number of factors including military rank (in part due to differences in education and age). However, again, there is an important gap in knowledge regarding these relationships in this population. Other research indicates that personal reflection is influenced by age and education (Kitchener & King, 1981). Education is positively associated with a greater understanding of the structure and stability of knowledge, whereas age is associated with an increased perception that everyone has the ability to learn (Schommer, 1998). Indeed, military rank (which is positively associated with education and age) may mediate the relationship between any exposure to sexual violence prior to the most recent pelvic exam and negative reactions to the most recent exam, such that reactions will be less negative with increased rank.

## **2. Military First Examination**

While a history of sexual violence is associated with greater discomfort and pain during recent pelvic examinations (Weitlauf et al., 2008; 2010), some research suggests that a woman's first experience with the gynecological examination shapes future expectations, beliefs, and experiences with the pelvic examination (Wijma, Gullberg, & Kjessler, 1998). To the extent that their first examination experience is negative or traumatic due to prior exposure to sexual violence, it is expected that subsequent pelvic examinations also will be experienced with distress, pain, fear, and/or embarrassment (or less rigorous adherence to routine screening). Yet, to date, this link has not been addressed. For active duty military women, the first examination experience may be further complicated by setting. For some women, the first examination experience may coincide with entry into the military. This entry includes the Military Entrance Processing Station (MEPS) process associated with basic training. This process consists of the prospective service member starting at approximately 0430 hours to begin the battery of tests and examinations (e.g., vision, hearing, blood test, blood pressure test, pregnancy test, an examination by a doctor [if needed a pelvic examination is administered], a height and weight check, urinalysis, breathalyzer test, a moral/background examination, and Armed Service Vocational Aptitude Battery [ASVAB]) test to ensure that the applicant meets standards. This process may be a less personalized and more business-like experience than would be expected in civilian care.

Thus, female service members who are receiving a pelvic examination for the first time during the MEPS process may be particularly vulnerable to the development of negative beliefs about preventive gynecological care. For the subset of female service members that enter the military with prior exposure to sexual violence, this experience may be particularly challenging.

In short, research in this area is quite limited, and most research has focused on female veterans and civilians. Little is known about how active duty female military personnel experience the pelvic examination or other gynecological components of their military physical examination. Research that seeks to understand more thoroughly the experiences of active duty females undergoing the pelvic examination as a component of routine military medical care is warranted. In particular, since many female military may enter service with a history of sexual victimization (e.g., childhood sexual abuse), the pelvic examination received upon their entry into military service may be their first examination and may influence both their perceptions of gynecological care and future adherence.

### **C. PURPOSE OF THESIS STUDY**

The purpose of this study is to begin to address these important gaps of knowledge, with the aim of making recommendations to enhance gynecological care for active duty females, particularly those who may struggle with the pelvic examination. The present study addresses these gaps by surveying a sample of current active duty female officers about their history of sexual violence and their experiences with their most recent pelvic examination (conducted during the course of military service) and their first pelvic examination. Based on prior studies, we expect that some female service members would have a history of sexual violence that adversely affects the first pelvic exam, negatively affects subsequent examinations. We also expect that a negative reaction to the first pelvic exam that occurs in a military setting will increase the likelihood of a negative reaction to the most recent examination. The main research question and specific hypotheses are as follows:

## **1. Research Question**

The fundamental research question to be answered by this study is:

Are active duty female military personnel at a military graduate school, who have a history of sexual violence, more likely than those without a history of sexual violence to experience pain, discomfort, and/or anxiety during the pelvic examination component of their most recent comprehensive military physical examination?

## **2. Hypotheses**

To answer this research question, we formulate three hypotheses:

H<sub>1</sub>: Any exposure to sexual violence prior to the most recent pelvic exam predicts negative reactions to the most recent exam.

H<sub>1a</sub>: Military rank (in part due to differences in education and age) mediates the relationship between any exposure to sexual violence prior to the most recent pelvic exam and negative reactions to most recent exam, such that reactions will be less negative with increased rank.

H<sub>2</sub>: A negative reaction to the first pelvic exam experience predicts a negative reaction to the most recent exam.

## **II. METHODOLOGY**

### **A. PARTICIPANTS**

There were 144 potentially eligible active duty female U.S. military students at an institution offering graduate degrees. Only 139 of the 144 had active or available e-mail addresses and received an invitation to participate. Participants were eligible if they were (1) currently enrolled as students at the institution at the time of the survey, and (2) were active duty U.S. military female. Participants who met these initial criteria were ineligible to participate if they (1) were civilian (nonmilitary), (2) were below the age of 18 or over the age of 65, (3) were male, (4) currently pregnant, (5) had given birth in the last 90 days, (6) had ever been diagnosed with cervical cancer, (7) had a hysterectomy, and/or (8) had been diagnosed with a terminal illness or other health condition that might prevent them from receiving a Pap smear test (see Figure 1). Of the final 61 eligible service members who gave their consent to participate in the survey, one member did not respond to questions related to the hypotheses, leaving a final sample total of 60. Table 1 describes the demographic characteristics of the sample. Of the 60 participants, three failed to complete parts of the survey. Taking a closer look at the related demographics (age, rank, time in service, marital status, and household income), there are more women 30 years or younger, O-1 to O-3, in the military 9 years or less, single, or make \$74,999 or less. All participants indicated that they had had a pelvic examination.

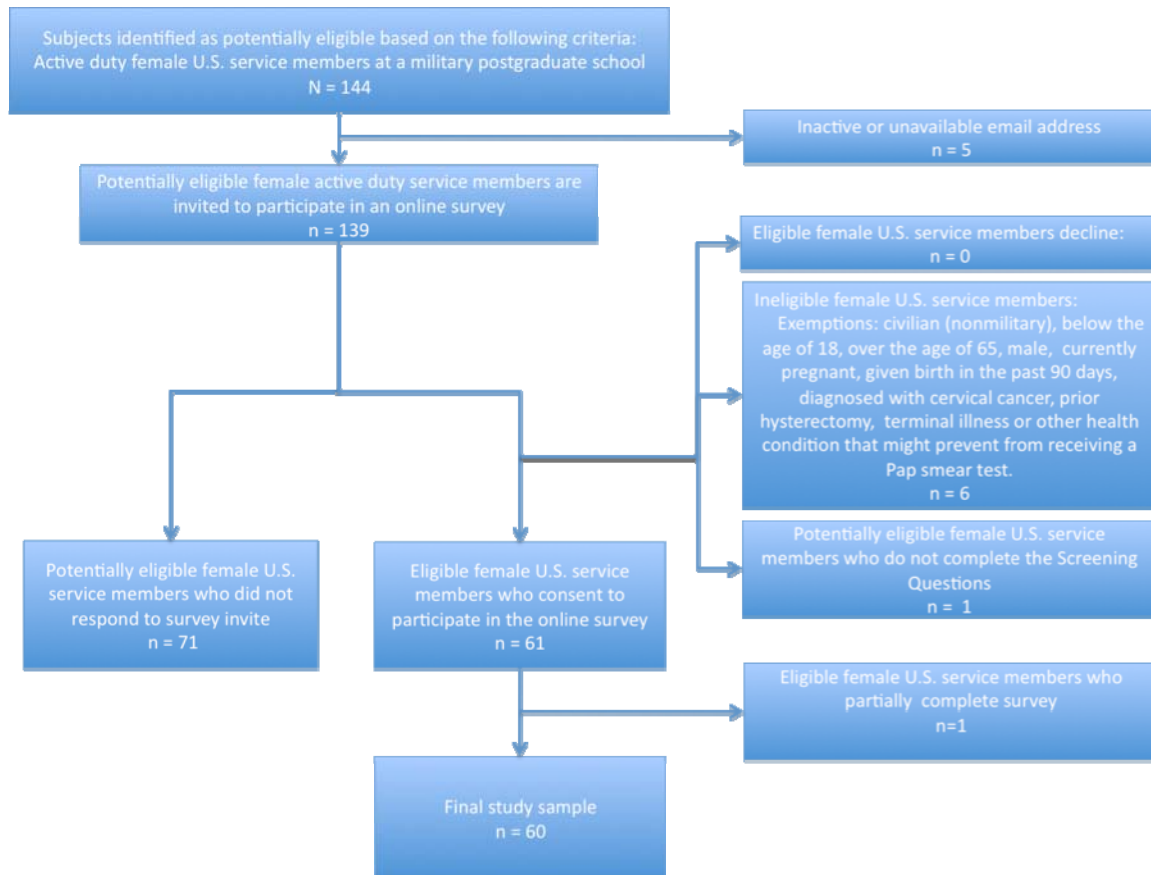


Figure 1. Overview of Study Recruitment and Retention

Note: Of the 60 participants, three failed to complete parts of the survey.

Table 1. Demographics

	Percentage (%)	Number of Responses
<b>Age</b>		<b>58</b>
30 years or younger	58.62	34
31 years or older	41.38	24
<b>Branch of Service</b>		<b>58</b>
Air Force	12.07	7
Army	3.45	2
Marines	5.17	3
Navy	79.31	46
<b>Rank</b>		<b>58</b>
O-1 to O-3	74.14	43
O-4 to O-10	25.86	15
<b>Time in Service</b>		<b>58</b>
0 to 4 years	17.24	10
5 to 9 years	50.00	29
10 to 14 years	20.69	12
15 to 19 years	8.62	5
20 or more years	3.45	2
<b>Race</b>		<b>58</b>
American Indian/Alaska Native	0.00	0
African American/Black	5.17	3
Asian or Native Hawaiian or Other Pacific	3.45	2
Caucasian/White	81.03	47
Hispanic or Latina	5.17	3
Other	5.17	3
<b>Marital Status</b>		<b>58</b>
Single	48.28	28
Divorced/Separated	12.07	7
Married/Living with domestic partner	39.66	23
<b>Household Income</b>		<b>57</b>
\$74,999 or less	43.86	25
\$75,000 - \$149,999	42.11	24
\$150,000 - \$224,999	10.53	6
\$225,000 or more	3.51	2



## **B. MEASURES**

Based on an initial pilot study to ensure survey questions are appropriate for this population, questions from the following six surveys are used to construct the survey used in this study (see the Appendix for the complete online survey).

### **1. Attitudes and Beliefs About Gynecological Care (Weitlauf et al., 2008)**

This survey consists of 14 questions asking women about their history of Pap smear examinations. One of the 14 questions is a multiple-choice, multiple-answer question. The question used is, “You answered that you have not had a Pap smear in the past 12 months, please tell us the reason. (Select the ONE answer that best describes why you have not had a Pap smear in the past 12 months).” With a response bank of “no reason/never thought about it, didn’t need one/didn’t know I needed one, doctor didn’t order it/didn’t say I needed it, haven’t had any problems, put it off/didn’t get around to it, had hysterectomy, don’t have a doctor, I don’t want to answer this question, I don’t know.”

Nine of the 14 questions are multiple-choice, in which respondents picked the single best answer. For example, the question, “Have you had a Pap smear in the last 3 years?” had the choice of a “yes” or “no” response. Finally, for this set of questions, three of the fourteen questions are open-ended. An example of these questions are “Briefly tell us why you either canceled and rescheduled or missed your last scheduled Pap Smear examination appointment.”

### **2. Gynecological Pain Rating Scale and Gynecological Examination Hierarchy (Weitlauf et al., 2008)**

Women may experience Pap smears differently; therefore, this survey, comprising 10 questions, is used to understand the participant’s feelings about Pap smears and gynecological care. Two of the 10 questions use five-point Likert scales. An example is “How embarrassed were you by having a Pap smear examination?” with the five-point Likert scale of “not at all embarrassed, mildly embarrassed, somewhat embarrassed, moderately embarrassed, very embarrassed.” The remaining eight questions use 11-point Likert scales. An example of these questions from the survey is “What was the level of

anxiety you experienced with each of these activities of the exam?” with responses ranging from “no anxiety at all, mild anxiety, moderate anxiety, to extreme anxiety.”

### **3. Trauma Questionnaire (McIntyre, Butterfield, Nanda, Parsey, Stechuchak, et al., 1999)**

Some women experience traumatic events during their lives. This is a survey that asks eight questions to find out about these events and how they affect women’s lives. Six of the eight questions have five parts. These five parts are illustrated with the following example. Part I asks a question that is multiple-choice, only one answer (e.g., “Have you ever been involved in a major accident or disaster?” with the answer choices of “yes,” “no,” or “don’t know”). If the respondent indicates “yes,” the skip logic in SurveyMonkey sends the participant to Part II. Part II also entails a question that is multiple-choice, only one answer (e.g., “When were you involved in the major accident or disaster?” with a choice of responses of “prior to the military service,” “during military service,” or “both Prior to and During military service”). If the participant chooses “prior to,” “during,” or “both prior to and during military service,” then the skip logic sends the participant to Parts III, IV, and V, respectively (e.g., if the individual chooses “prior to” then the logic will send them to a screen with the question, “How old were you when you were involved in the major accident or disaster prior to the military service?” in which respondents are asked to list “age at each event (e.g., for one event “35” or for multiple events “12, 20, 25”).”

If a respondent indicated “no” or “don’t know” to the question in Part I, then the skip logic directs her to the next question.

This survey also includes a question with two parts. For example, one question asked “Have you ever experienced combat related trauma (i.e., I.E.D., explosion, convoy attack)?” with the response of “yes,” “no,” or “don’t know.” If a participant selects “yes,” then she is sent to Part II, in which she is asked at what age the events occurred. For example, “How old were you when you experienced combat related trauma? Age at each event (e.g., for one event “35” or for multiple events “12, 20, 25”).” However, if the response is “no” or “don’t know” then the skip logic sent the participant to the next

question. Finally, the remaining question is, “Were you ever sexually assaulted or touched in a sexual way, by a person 5 or more years older than you when you were below the age of 13?” with response options of “yes,” “no,” or “don’t know.”

#### **4. Reactions to First Pap Smear and Pelvic Examinations (Weitlauf et al., 2008)**

A woman’s first experience with a Pap smear examination is an important element of her health care and may impact subsequent examinations. This survey has the following instructions:

Take a few moments to recall your very first examination that involved a Pap smear, and respond accordingly to the questions provided in this section of the survey. We realize that it may have been difficult to remember this information but it was important that you answer each question to the best of your memory/knowledge.

One question asks, “What was the reason for your first examination?” and participants can select all pertinent responses from the list of “birth control,” “infection or other gynecological problem,” “pregnancy,” “post-sexual assault,” “routine screening,” “do not remember,” or “other.” Two of the 12 questions use five-point Likert scales with an additional response option of “do not remember” (e.g., “During your first Pap smear, how frightened were you by having a Pap smear examination?” with the response options of “not frightened at all,” “mildly frightened,” “somewhat frightened,” “moderately frightened,” “very frightened,” or “do not remember”). Finally, there are seven questions that utilized 11-point Likert scales, again with an additional response option of “do not remember.” For example, “lying on the exam table with my feet in the stirrups” has responses ranging from “not at all anxious,” “mildly anxious,” “moderately anxious,” “extremely anxious,” as well as the option of “do not remember.”

#### **5. Recommendations to Improve Active Duty Female Military Gynecological Experiences**

This is a six-question survey asking women to describe the ways in which the military might improve the sensitivity of gynecological care for female service members. Three of the six questions were multiple-choice, only one answer. An example of these

questions is “Where did you receive gynecological care “while deployed?” with the response options of “ship,” “combat zone,” “forward deployed medical facility,” or “other medical care facility (describe type of facility).” Another question uses an 11-point Likert scale (e.g., “How satisfied are you with your women’s health care at [a local military health care clinic]?” with response options ranging from “not at all satisfied,” “mildly satisfied,” “mostly satisfied,” and “extremely satisfied.” There also is an open-ended question that asks, “Do you have any suggestions for improving gynecological care “while deployed” for female service members?” This survey ends with a multiple-choice, multiple-answer question of “What suggestions do you have for improving women’s health care (e.g., provision of gynecological screening like Pap smears) at [a local military health care center]?” It has the instruction to “check all that apply” of the following options: “need more female clinicians,” “need more time allotted for examinations,” “need option to see consistent provider from year to year,” and “need more women focused settings (e.g., better gowns, more options for draping and coverage, more educational resources for women service members).”

## **6. General Demographic Information**

This is a seven-question survey asking women about who they are, covering age, branch of service, rank, time in service, race, marital status, and combined family income. So that respondents could not be easily identifiable, broad response ranges were used (e.g., “What age range are you in?” with a choice of responses of “30 or under” or “31 or older”).

## **C. PROCEDURE**

This study is approved by the Institutional Review Board (IRB). The survey is conducted via the Internet on SurveyMonkey, which is software marked by a private American company that enables users to create their own Web-based surveys. A pilot study is first conducted to verify that all survey questions were pertinent to active duty U.S. military females and to ensure that the survey is operable in SurveyMonkey. For the main study, participants receive an email invitation to participate in a study entitled “U.S. Military Active Duty Female Officers Experience of Pain, Discomfort and/or

Anxiety During Pelvic Examinations.” This email contained a link to SurveyMonkey. When this link is selected, participants are first directed to the informational consent screen, which contains a brief overview of the study, along with the potential risks and benefits of participating. On this screen, the women also are asked to participate in the study by clicking on the “Yes” button. At this point, they were directed to screening questions to ensure that all participants are in fact eligible for the study. If they indicated that they had any one of the ineligibility criteria, they are directed to the exit screen. For those participants that passed the screening questions, they then began responding to the survey questions in the following order: (1) Attitudes and beliefs about gynecological care, (2) Reaction to the most recent pap smear/pelvic examination, (3) Trauma questionnaire, (4) Reaction to the first pap smear/pelvic examination, (5) Recommendations to improve active duty female military GYN experience, and (6) Background information. The order of the surveys is the same for all participants. At any time, respondents have the choice of not answering a question or stopping altogether. The entire online survey takes approximately 10-30 minutes to complete.

### III. RESULTS

The survey results are summarized using two types of variables: the explanatory (independent) variables and the response (dependent) variables. The explanatory variables are two categorical variables: (1) history of sexual violence (having a history or having no history), and (2) rank (O-1 to O-3 or O-4 to O-10). Based on the survey, a history of sexual violence is defined to be an answer of “Yes” to any of the following three questions from the “Trauma Questionnaire” section of the online survey: (1) “Have you ever received uninvited and unwanted sexual attention (e.g., touching or cornering, pressure for sexual favors)?” (2) “Has anyone ever used force or the threat of force to have sex with you against your will?” (3) “Were you ever sexually assaulted or touched in a sexual way, by a person 5 or more years older than you when you were below the age of 13?” With an answer of “No” or “Don’t know,” a participant is defined as having no history of sexual violence. Using this definition, almost half of the sample (45%) had a history of sexual violence.

The response variables are level of (1) fear, (2) embarrassment, (3) distress, and (4) other distress to the first and most recent pelvic examination. Level of fear on the most recent pelvic examination is the response (measured on a five-point Likert scale) to the question, “How frightened were you by a Pap smear examination?” in the “Reaction to the most recent Pap smear/pelvic examination” section of the survey. The level of embarrassment was the response on the same five-point Likert scale to the question “How embarrassed were you by having a Pap smear examination?”

The level of distress is calculated by taking the mean of the responses to the following questions: (1) “What was the level of discomfort you experienced when your doctor inserted the speculum into your vagina?” (2) “What was the level of anxiety you experienced with each of these activities of the exam? (lying on the exam table with my feet in the stirrups, (3) inserting the speculum into vagina, and (4) manual pelvic examination (doctor examining vagina, uterus, ovaries, and rectum with gloved hands).” The level of other distress is defined in much the same way by taking the mean response of the 11-point Likert scale for the following questions: (1) “What was the level of

anxiety you experienced with each of these activities of the exam? (Disrobing (taking off my clothes), (2) getting weighed, (3) having my blood pressure taken, and (4) discussing my health history/concerns with my doctor).” These calculations were repeated for responses regarding the first pelvic exam. Group means based on history of sexual violence status were calculated for each dependent variable. For all analysis, alpha level of 0.05 was used to determine significance.

## **A. DEMOGRAPHICS**

It was first determined whether this sample of women was representative of the population of U.S. active duty female students enrolled at the institution at the time of the study. Next, the sample was classified by history of sexual violence, and Fisher’s exact test (DeVore, 2009; DeVeaus, Velleman, & Bock, 2008) is used to determine if the two sexual violence groups differed in (1) general demographics, and (2) reporting of history of pelvic examination screening.

### **1. Comparison of Sample of Survey Responders, Nonresponders and Population of Interest**

Of the 144 active duty female service members at the military postgraduate school, 139 were asked to participate. To compare the demographics of the 71 who did not respond with those who participated in the survey, the military postgraduate school provided demographic statistics for 144 active duty female service members enrolled at the time of the survey, which are given in Table 2. These 144 include the 141 original female military service members. Also included in Table 2 are demographics for the 60 respondents used in the study. Because a few of the 60 respondents failed to provide demographic information and because demographic information (in particular age and race) is missing for several individuals in the population, we cannot provide exact demographic information for the 71 nonrespondents. However, we can give approximate demographic statistics of the nonrespondents by subtracting the number for each category of the respondents from the corresponding number in the population. The difference is 84 individuals, which includes the 71 nonrespondents, five invalid email addresses, six determined ineligible during the screening questions, one who failed to complete the

screening questions, and one partially completed survey. Comparing the demographics of this group to the demographics of the 60 respondents, we see that of those with nonmissing demographics, there is very little difference in the distribution of rank and branch of service. There does appear to be some difference in the distribution of age, with the respondents tending to be younger than nonrespondents. Because Table 2 only gives approximate demographic statistics for the nonrespondents, we do not perform formal statistical inference to determine if there is a difference the respondents and nonrespondents.

Table 2. Comparison of Population, Sample, and Difference

	<b>Population (N=144)</b>	<b>Sample (n=60)</b>	<b>Difference (n=84)</b>
<b>Age</b>			
30 or Younger	46%	57%	38%
31 or Older	45%	40%	49%
Unknown	9%	3%	13%
<b>Branch of Service</b>			
Air Force	13%	12%	13%
Army	8%	3%	11%
Marines	6%	5%	6%
Navy	72%	77%	69%
Other/Unknown	2%	3%	1%
<b>Rank</b>			
O-1 to O-3	71%	72%	70%
O-4 to O-10	28%	25%	30%
Unknown	1%	3%	0%
<b>Race</b>			
American Indian/Alaskan Native	1%	0%	1%
African American/Black	10%	5%	13%
Asian American or Native Hawaiian or Other Pacific Islander	7%	3%	10%
Caucasian/White	69%	78%	62%
Hispanic/Latino	10%	5%	13%
Unknown	4%	8%	1%

Note: The difference is that the population at the military postgraduate school subtracts the sample that participated in the survey.



## **2. Descriptive Analysis of the General Demographics and History of Sexual Violence**

Fisher's exact test indicates that at the two-tailed 5% level of significance, there is not enough evidence to show a difference between women with a history of sexual violence and women without a history of sexual violence for each of the demographic characteristics (see Table 3).

Table 3. Demographic Characteristics by Sexual Violence Status Based on the Sample

Total Number of Women Included in the Analysis (n = 60)		Lifetime Exposure to Sexual Violence (n=27)	No Lifetime Exposure to Sexual Violence (n=33)	P-value
<b>Age</b>	<b>58</b>			
30 or Younger	34	17	17	0.43
31 or Older	24	9	15	
<b>Branch of Service</b>	<b>60</b>			
Air Force	7	4	1	0.19
Army	2	0	2	
Marines	3	1	2	
Navy	46	25	14	
<b>Rank</b>	<b>58</b>			
O-1 to O-3	43	20	23	0.77
O-4 to O-10	15	6	9	
<b>Time in Service</b>	<b>58</b>			
0 -4 years	10	4	6	0.50
5 -9 years	29	13	16	
10 -14 years	12	6	6	
15 -19 years	5	1	4	
20 or more years	2	2	0	
<b>Race</b>	<b>58</b>			
American Indian/Alaska Native	0	0	0	0.15
African American/Black	3	0	3	
Asian or Native Hawaiian or Other Pacific Islander	0	0	0	
Caucasian/White	47	24	23	
Hispanic or Latina	3	2	1	
Other	3	0	3	
<b>Marital Status (at most recent exam)</b>	<b>58</b>			
Single	28	11	17	0.33
Divorced/Separated	7	5	2	
Married/Living with domestic partner	23	10	13	
<b>Household Income</b>	<b>57</b>			
\$74,999 or less	25	9	16	0.06
\$75,000 - \$149,999	24	15	9	
\$150,000 - \$224,999	6	1	5	
\$250,000 or more	2	0	2	

### **3. History of Pap Smear Examinations by History of Sexual Violence**

Each row of Table 4 provides descriptive statistics summarizing histories of Pap smear tests for the entire sample, for those who had a history of sexual violence, and those who did not. Also included are the p-values corresponding to the statistical tests comparing those who had a history of sexual violence with those who did not have a history of sexual violence. In this section, we discuss each row in Table 4. Based on the values in Table 4, a large sample one-sided test for difference in proportions shows that at any reasonable level of significance, there is insufficient evidence to say that a history of sexual violence reduces the proportion of women who have had a pap smear in the last three years ( $p = 0.165$ ) or in the last 12 months ( $p = 0.35$ ). However, women with a history of sexual violence did have more pap smears in the last three years than women without a history of sexual violence ( $p = 0.03$ ). Wilcoxon rank sum test was the statistical method used to determine the p-value comparing the number of Pap smears over three years ago and age of first Pap test. The participants' mean age during their first Pap smear test is 18.69 years, with a standard deviation of 2.69 years. Those that have a history of sexual violence have a mean age of 17.53 years and a standard deviation of 1.71 years. Those with no history of sexual violence have a mean age of 19.54 years, with a standard deviation of 2.94 years. A Wilcoxon test for the difference with the mean age of the first Pap smear test suggests that there is a difference between the mean age of women with a history of sexual violence and those with no history of sexual violence ( $p = 0.04$ ). Of the 26 women that had their first Pap smear/pelvic examination in a military setting, nearly twice as many had no history of sexual violence (51.51%) to having a history of sexual violence (33.33%). However, a two-proportion z test gave a result of 1.51 ( $p = 0.13$ ), indicating there is insufficient evidence to show a significant difference.

Table 4. History of Pap Smear Test for the Sample by History of Sexual Violence Status

	All Sample (n = 60)	Sexual Violence (n = 27)	No Sexual Violence (n = 33)	P-value
<b>Number who had a Pap in Prior 3 years</b> (% within group)	57 (95%)	24 (89%)	32 (97%)	0.165
<b>Number who had a Pap in Prior 12 months</b> (% within group)	49 (81%)	21 (78%)	27 (82%)	0.35
<b>Average Number of Paps in Prior 3 years</b> (Standard Deviation)	2.74(1.22)	3.00(0.66)	2.56(0.76)	0.03
<b>Average Age of first Pap test</b> n = 45, (Standard Deviation)	18.69(2.67)	17.53(1.71)	19.54(2.94)	0.04
<b>Number with first Pap test in Military</b> (% within group)	26 (43%)	9 (33%)	17 (52%)	0.13
<b>Number who ever had an abnormal Pap</b> (% within group)	23 (38%)	12 (44%)	11 (33%)	0.38
<b>Number with last abnormal Pap</b> (% within group)	7 (12%)	4 (15%)	3 (9%)	0.51

**Hypothesis 1:** *Any exposure to sexual violence prior to the most recent pelvic exam predicts negative reactions to most recent exam.*

To test the hypothesis regarding the relationship between history of sexual violence and subjective experiences with the most recent pelvic exam, the one-sided Wilcoxon rank sum test was used. For each of the reactions, there is not enough statistical evidence to indicate that exposure to sexual violence increases the reaction. However, the results (summarized in Table 5) showing that the most recent pelvic examination regarding women without a history of sexual violence reporting a higher level of fear than those with a history of sexual violence are interesting. Those that have a lifetime exposure to sexual violence and fear had a mean rating of 0.04, with a standard deviation of 0.19; the range on a five-point Likert scale is 0 to 4. Those that had no lifetime exposure to sexual violence have a mean of 0.42, with a standard deviation of 0.94 on the same Likert scale (see Table 5). Like fear, level of embarrassment is on a five-point Likert scale (0 to 4), whereas the average distress and average other distress' range is on an 11-point Likert scale (0 to 10).

Table 5. History of Sexual Violence and Reaction to Most Recent Pelvic Examination

Reaction to Most Recent Pelvic Examination (n = 60)		Lifetime Exposure to Sexual Violence (n = 27)	No Lifetime Exposure to Sexual Violence (n = 33)	P-value
<b>Fear</b>	<b>n = 59</b>			
	Mean (SD)	0.04 (0.19)	0.42 (0.94)	
	Median	0	0	0.985
<b>Embarrassment</b>	<b>n = 59</b>			
	Mean (SD)	0.58 (0.90)	0.55 (0.94)	
	Median	0	0	0.36
<b>Average Distress (Discomfort and Anxiety)</b>	<b>n = 59</b>			
	Mean (SD)	3.01 (2.07)	2.96 (2.63)	
	Median	2.75	2.5	0.305
<b>Average Other Distress (Discomfort and Anxiety)</b>	<b>n = 59</b>			
	Mean (SD)	0.70 (0.69)	1.01 (1.10)	
	Median	0.63	0.75	0.735

Figures 2 through 5 show distributions of the responses to these questions for each group. In particular, we see in Figure 2 that there are eight respondents with no history of sexual violence, with a fear level greater than 0, compared to only one such respondent among those with a history of sexual violence. Even when we pool the fear level responses 1 to 4 against those with the level of response of 0, using Fisher's exact test, we see a significant difference ( $p=0.03$ ).

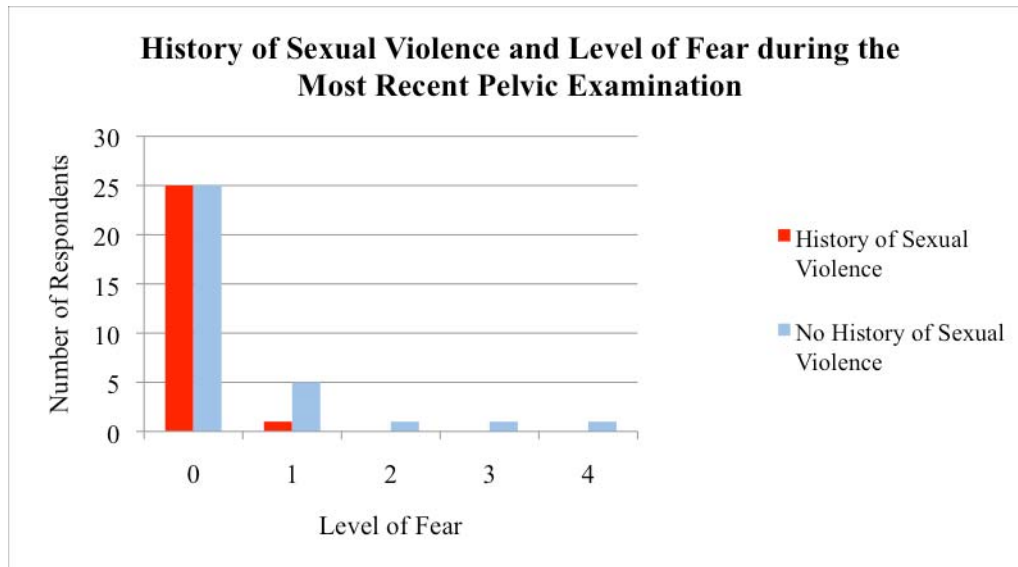


Figure 2. History of Sexual Violence and Level of Fear during the Most Recent Pelvic Examination

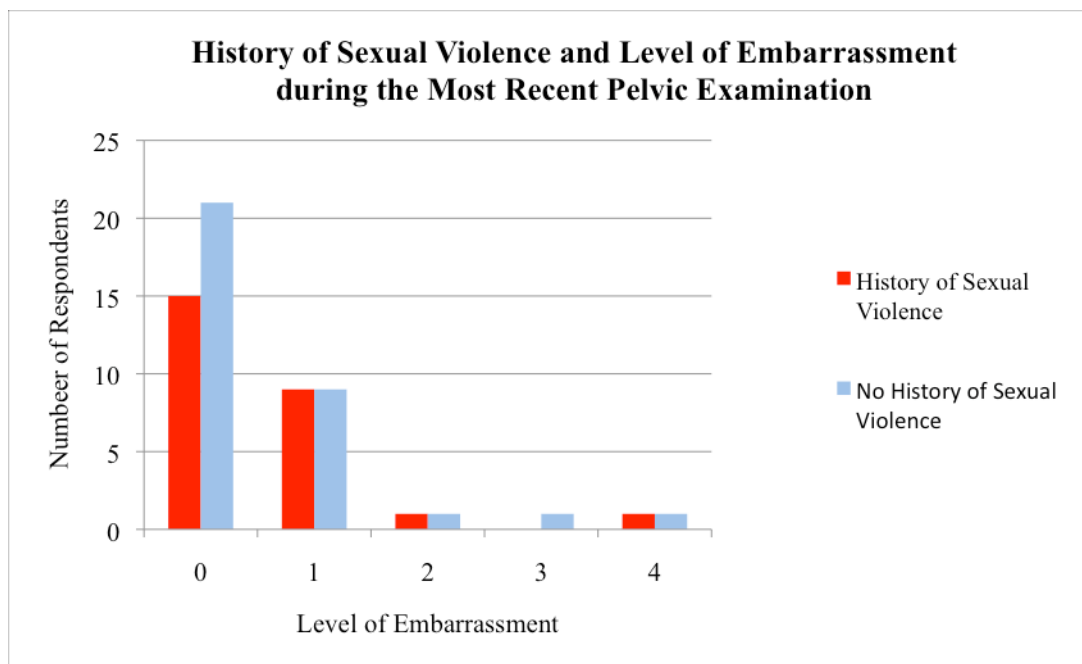


Figure 3. History of Sexual Violence and Level of Embarrassment during the Most Recent Pelvic Examination

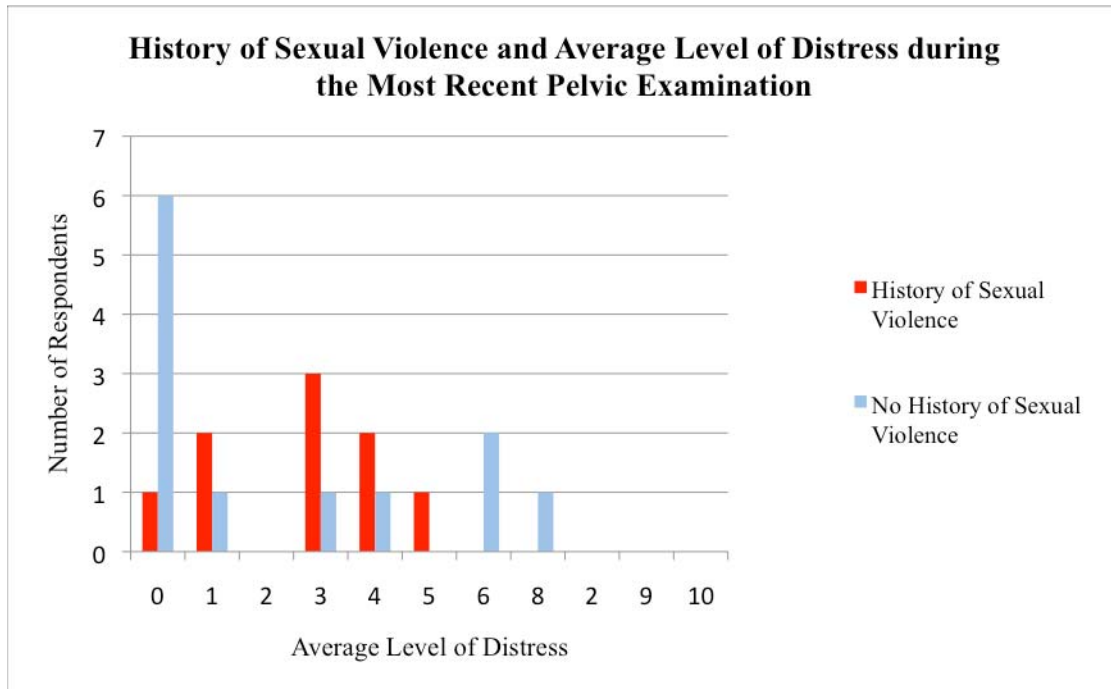


Figure 4. History of Sexual violence and Average Level of Distress during the Most Recent Pelvic Examination

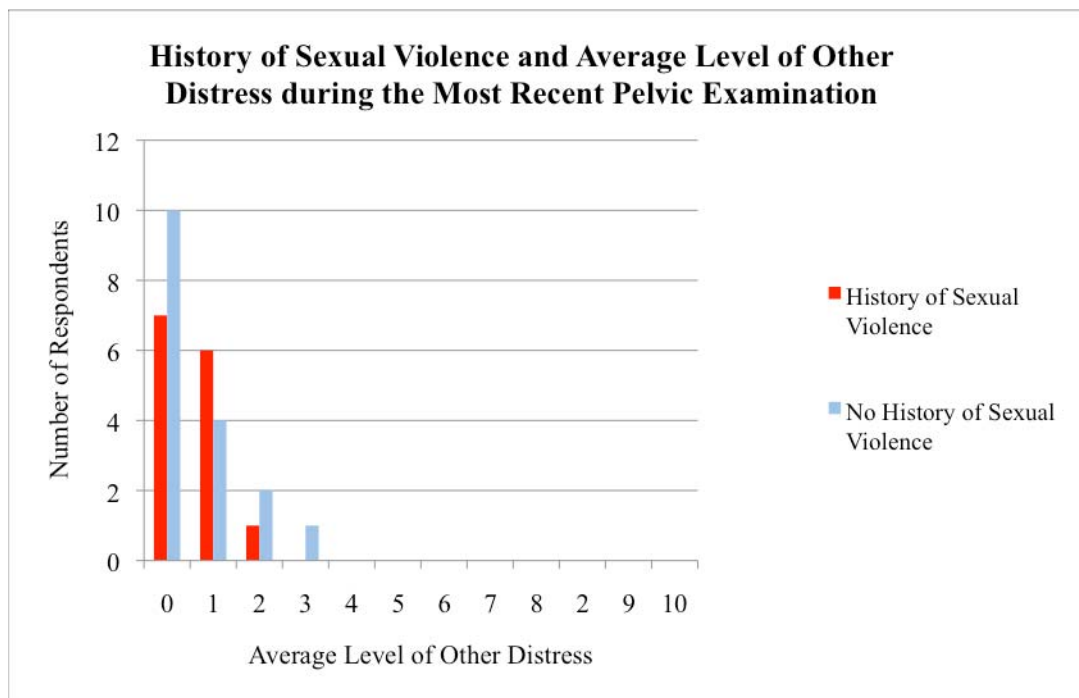


Figure 5. History of Sexual Violence and Average Level of Other Distress during the Most Recent Pelvic Examination

**Hypothesis 1a:** *Military rank (in part due to differences in education and age) mediates the relationship between any exposure to sexual violence prior to the most recent pelvic exam and negative reactions to most recent exam, such that reactions will be less negative with increased rank.*

Table 6 compares sexual violence experiences and pelvic examination history for the two rank groups. The p-values in Table 6 correspond to two sample tests that the proportions of women experiencing different types of sexual violence differ between the two rank groups. There is insufficient evidence from any of the tests to show a relationship between sexual violence and rank. Nor is there evidence to show a relationship between the history of the first pelvic examination and rank.

Table 6. History of Sexual Violence by Rank

	<b>Officer O-1 to O-3 (n = 43)</b>	<b>Officer O-4 to O-10 (n = 15)</b>	<b>P-value</b>
<b>History Sexual Violence (n = 27) n</b> (% within group)	20 (47%)	6 (40%)	0.66
<b>No History Sexual Violence (n = 33) n</b> (% within group)	23 (53%)	9 (60%)	
<b>Type of Sexual Violence</b>			
Childhood Sexual Violence (n = 13) n (% within group)	7 (16%)	5 (33%)	0.20
Adult Civilian Sexual Violence (n = 1) n (% within group)	0 (0%)	1 (7%)	0.30
Military Sexual Violence (n = 8) n (% within group)	6 (14%)	2 (13%)	0.95
Combined Sexual Violence (n = 15) n (% within group)	10 (23%)	4 (26%)	0.79
<b>1st Pelvic Exam was in the Military (n = 26) n</b> (% within group)	19 (44%)	6 (40%)	0.78
Childhood Sexual Violence and 1 <sup>st</sup> Exam was in the military (n = 13) n (% within group)	1(5%)	2(33%)	0.23

To see if rank might mediate the relationship between exposure to sexual violence and negative reactions to most recent examination, Figures 2 through 5 plot respectively the response variables fear, embarrassment, distress, and other distress by rank and history of sexual violence. The x-axis represents the interaction between rank and sexual



violence (1 = “O-1 to O-3” with no history of sexual violence, 2 = “O-1 to O-3” with a history of sexual violence, 3 = “O-4 to O-10” with no history of sexual violence, 4 = “O-4 to O-10” with a history of sexual violence). The y-axis represents the reaction to the most recent pelvic examination (fear and embarrassment are rated on a Likert scale from 0 to 4, distress and other distress are rated on a Likert scale from 0 to 10). Included in these plots is the mean response for all respondents (red horizontal line), the mean response for each group (blue diamond) and standard error bars (blue).

Figures 6 through 9 are consistent with the results of Table 5. In general, they show that the level of response does not increase with a history of sexual violence. Further, as in Table 5, Figure 2 suggests that the level of fear actually decreases with a history of sexual violence. In none of Figures 6, 8, or 9 is there evidence of interaction between history of sexual violence and rank (i.e., there is no evidence that rank mediates the relationship between exposure of sexual violence and negative reaction to most recent exams). Figure 7 also does not provide evidence that rank mediates this relationship. If anything, Figure 7 suggests that at higher ranks the embarrassment increases more with a history of sexual violence than it does at lower ranks.

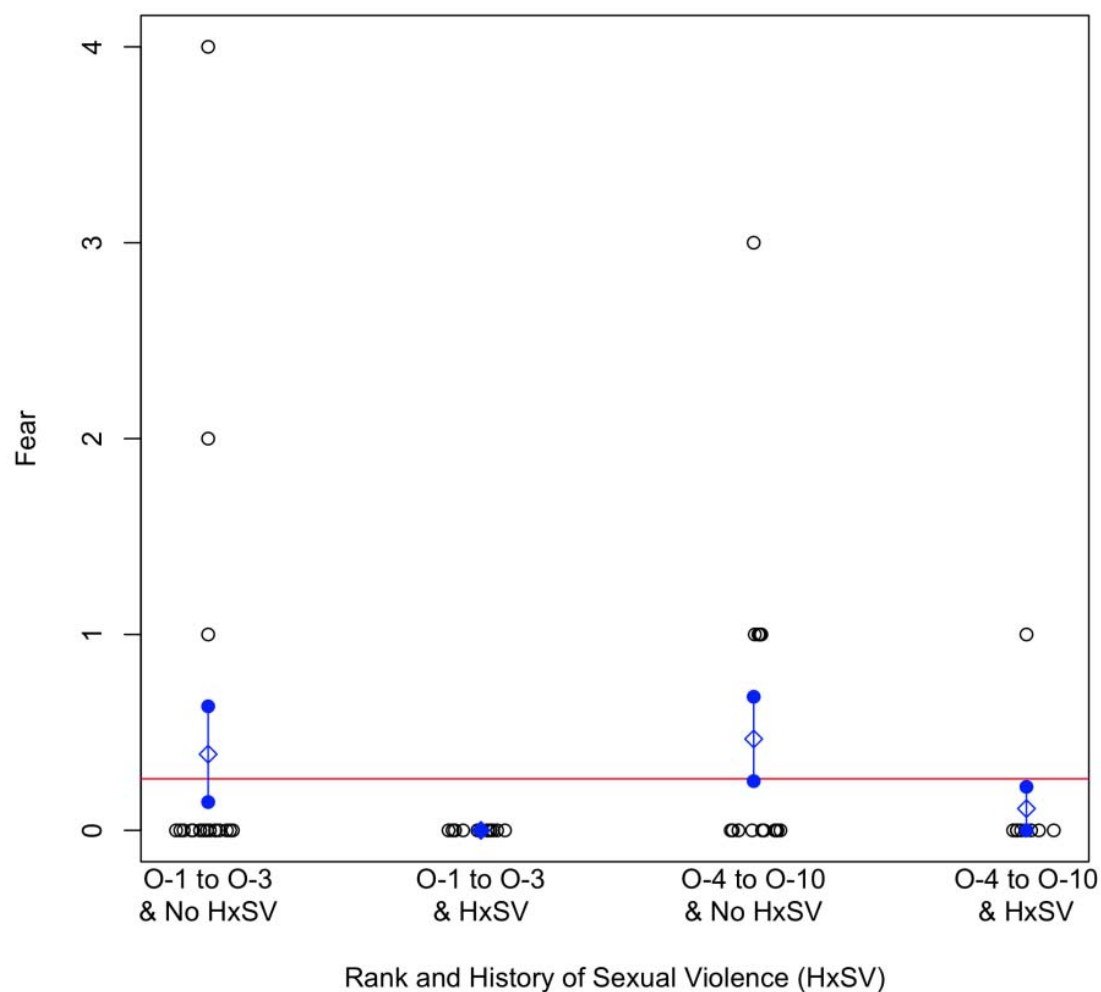


Figure 6. Level of Fear during Most Recent Pelvic Examination by Rank and Sexual Violence Status

Note: The x-axis refers to the interaction between rank and sexual violence history as O-1 to O-3 with no history of sexual violence, O-1 to O-3 with a history of sexual violence, O-4 to O-10 with no history of sexual violence, and O-4 to O-10 with no history of sexual violence; the number of observations is 16, 16, 15, and 9, respectively.

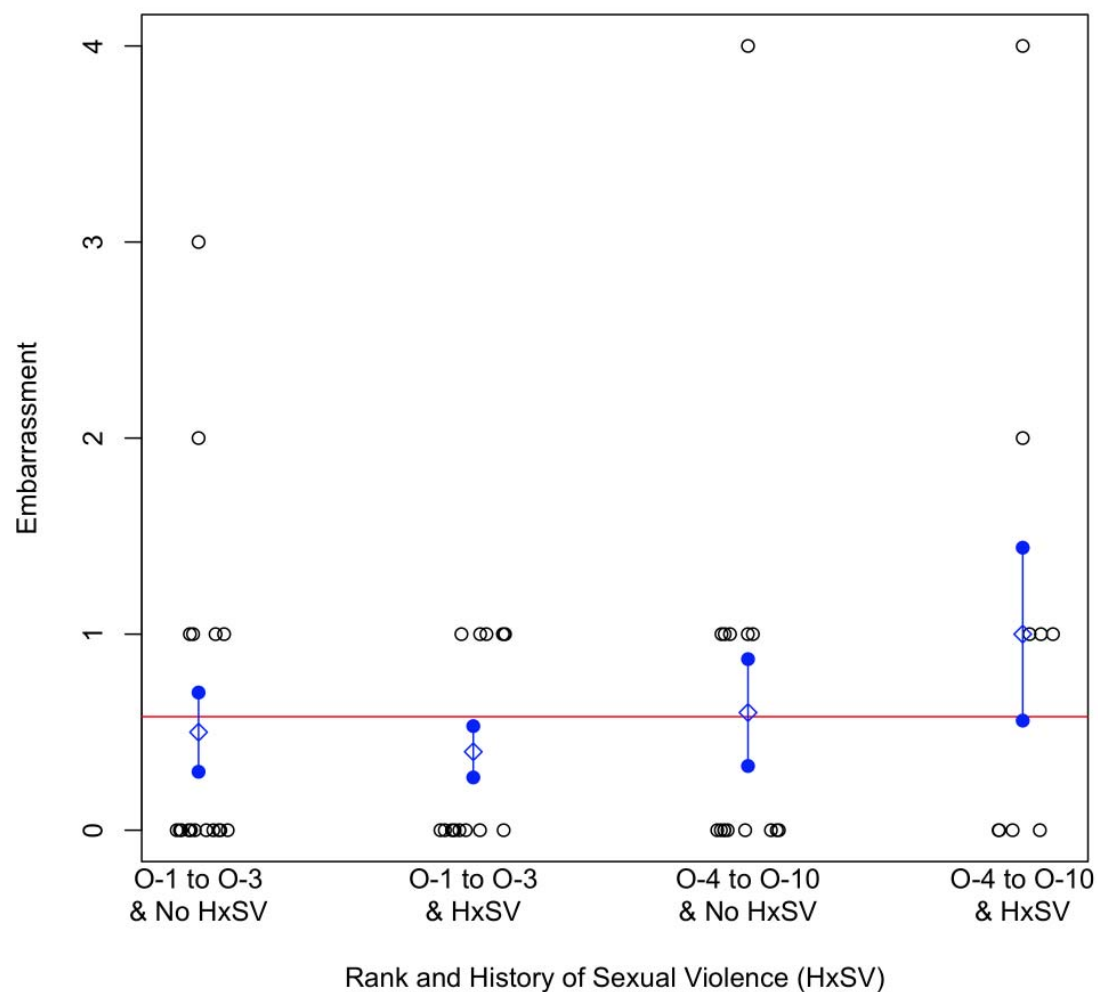


Figure 7. Level of Embarrassment during Most Recent Pelvic Examination by Rank and Sexual Violence Status

Note: The x-axis refers to the interaction between rank and sexual violence history as O-1 to O-3 with no history of sexual violence, O-1 to O-3 with a history of sexual violence, O-4 to O-10 with no history of sexual violence, and O-4 to O-10 with no history of sexual violence; the number of observations is 17, 16, 15, and 9, respectively.

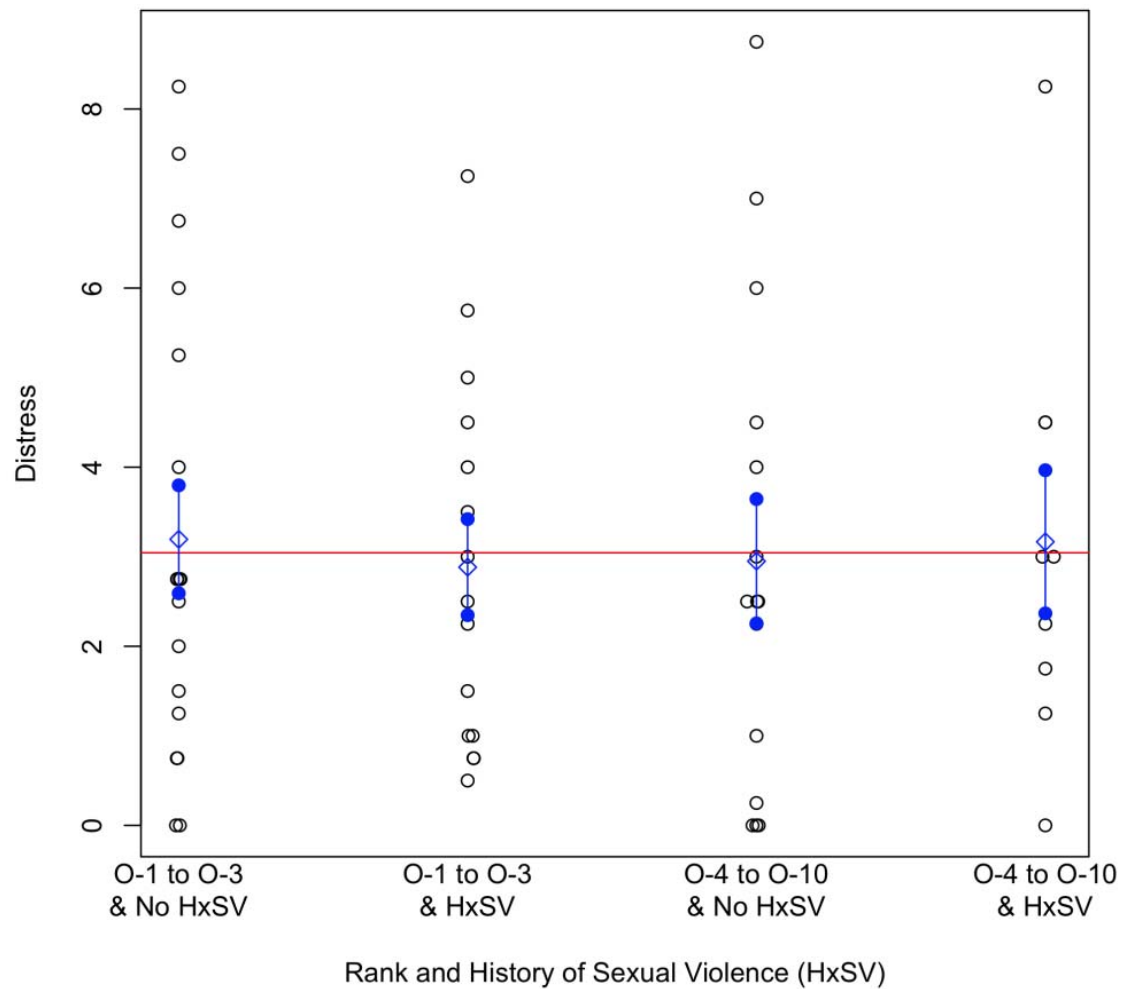


Figure 8. Level of Distress during Most Recent Pelvic Examination by Rank and Sexual Violence Status

Note: The x-axis refers to the interaction between rank and sexual violence history as O-1 to O-3 with no history of sexual violence, O-1 to O-3 with a history of sexual violence, O-4 to O-10 with no history of sexual violence, and O-4 to O-10 with no history of sexual violence; the number of observations is 17, 16, 15, and 9, respectively.

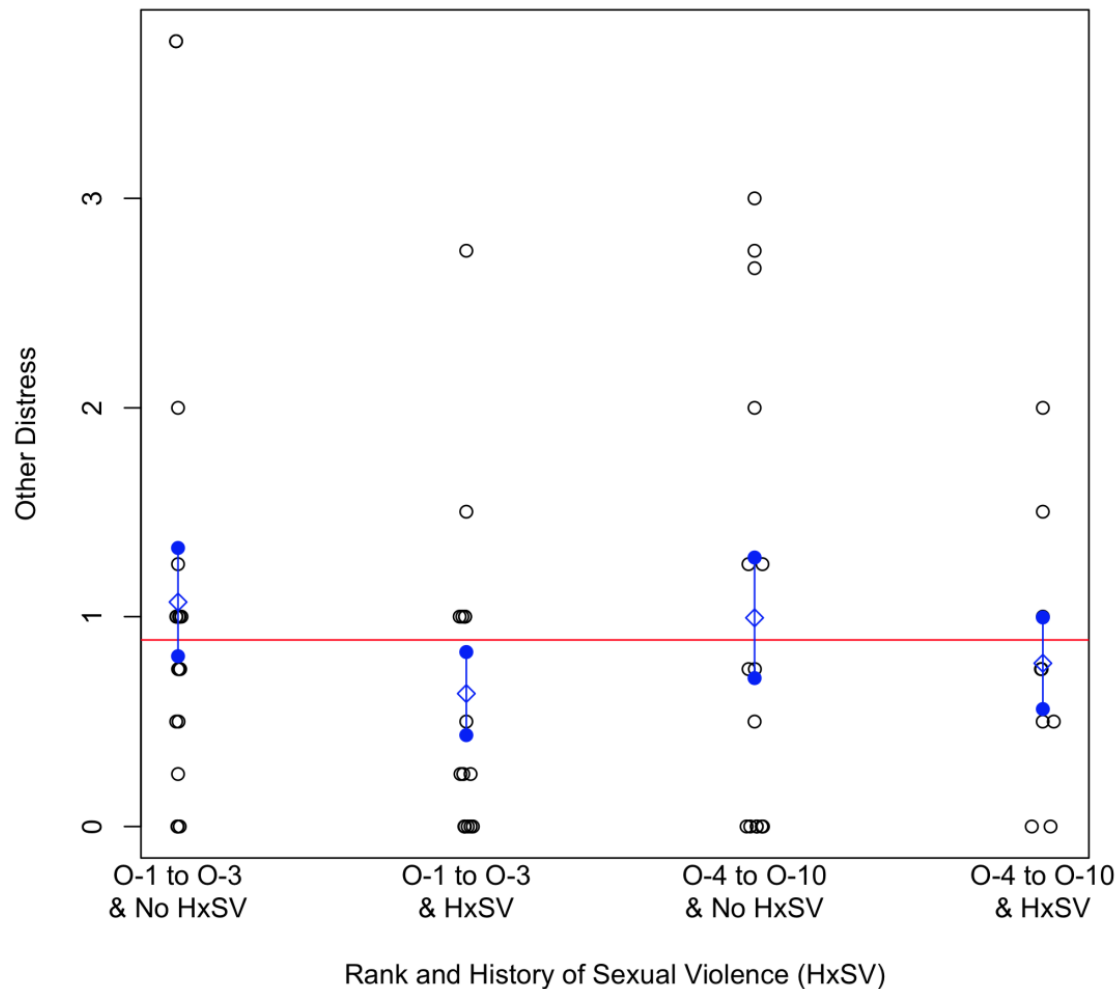


Figure 9. Level of Other Distress during Most Recent Pelvic Examination by Rank and Sexual Violence Status

Note: The x-axis refers to the interaction between rank and sexual violence history as O-1 to O-3 with no history of sexual violence, O-1 to O-3 with a history of sexual violence, O-4 to O-10 with no history of sexual violence, and O-4 to O-10 with no history of sexual violence; the number of observations is 17, 16, 15, and 9, respectively.

**Hypothesis 2: *The first pelvic exam experience predicts the most recent exam reaction.***

As expected, there is strong evidence that the first pelvic examination experience was positively correlated with the most recent pelvic examination experience. Table 7

provides the Spearman correlation for each dependent variable, with the p-value testing the one-sided hypothesis that the correlations between first and most recent pelvic examination responses are significant and positive.

Table 7. Spearman's Correlation Between 1<sup>st</sup> and Most Recent Pelvic Examination

	<b>Spearman's Correlation</b>	<b>P-value</b>
<b>1st Pelvic Examination by Most Recent Pelvic Examination</b>		
Fear	0.3956	0.00095
Embarrassment	0.4692	0.00015
Distress	0.6114	< 0.0001
Other Distress	0.5495	< 0.0001

As can be seen in Table 8, participants, regardless of sexual violence status, report stronger reactions to the first pelvic examination than to the most recent examination. P-values based on one-tailed hypothesis testing were calculated via the Wilcoxon signed rank test.

Table 8. The Mean (and Standard Deviation) of Responses to 1<sup>st</sup> and Most Recent Pelvic Examination by History of Sexual Violence

	<b>1st Pelvic Examination</b>	<b>Most Recent Pelvic Examination</b>	<b>P-value</b>
<b>History of Sexual Violence</b>			
Fear	1.52 (1.48)	0.04 (0.19)	0.000107
Embarrassment	2.08 (1.44)	0.58 (0.90)	< 0.0001
Distress	4.49 (3.42)	3.01 (2.07)	< 0.0001
Other Distress	2.06 (2.23)	0.70 (0.69)	< 0.0001
<b>No History of Sexual Violence</b>			
Fear	2.30 (2.02)	0.42 (0.94)	< 0.0001
Embarrassment	2.27 (1.46)	0.55 (0.94)	< 0.0001
Distress	5.18 (3.31)	2.96 (2.63)	< 0.0001
Other Distress	1.80 (1.56)	1.01 (1.10)	< 0.0001

#### 4. Recommendations

Table 9 gives the percentage of the sample (n=60) that responded to the question “What suggestions do you have for improving women’s health care (e.g., provision of gynecological screening like Pap smears) at the local military health clinic?” in the “Recommendation to improve gynecological (GYN) care” section of the survey. The women were given the option to check all that apply and to add their own comments at the end.

Table 9. Percentage of Participants Who Endorsed Recommendations

	<b>Sample Size (n=60)</b>
<b>Need more female clinicians</b>	15%
<b>Need more time allotted for examinations</b>	15%
<b>Need option to see consistent provider from year to year</b>	17%
<b>Need more women focused settings (e.g., better gowns, more options for draping and coverage, more educational resources for women service members)</b>	15%

Thirteen participants added their own comments; below are the lightly edited comments (some participants made multiple comments) grouped by topic:

#### **Gynecological Care Provider Competence**

- Provider was not well educated on miscarriage complications or care.
- I would prefer an actual physician to perform the procedure instead of a nurse practitioner; I do not think they are very competent.
- Need not to feel rushed when trying to ask questions. Plus, the same person that did my pap was the same person I saw for a knee injury. So, I didn't feel that I was getting the best advice for my female needs.
- Doctors need to act like they care about you. The actual female providers are worse than the males. I won't even see a female provider at the local military health clinic because they are so callus (sic). The last one basically called me a liar.
- Some of the providers, especially male, could work on their sensitivity. I have been to the local military health clinic for female issues and felt like it was automatically assumed that I had an STD. After having to go through humiliating tests when I knew I was clean, the tests came back negative. Some of the male providers upset me and I felt as if they tried to make me feel like I had done something wrong.

### **Competence in the Gynecological Process**

- Would like to get results of tests like asked for in the mail. The line of “we'll call you if anything is abnormal” is WRONG. Not being told you are in good health is the same as being told I am in bad health.
- There is a different medical staff member every year, prefer to have more consistency.
- Better front desk people who cheerfully schedule your appointment or try to work around your school and work schedule. They are often angry that you cannot miss class in the morning.
- It's bad enough having to move every few years, it would be nice in one location to not have to be probed by a different man every year.
- The inconsistencies from appointment to appointment need to be fixed. Waiting for long periods after undressing could be cut down. I would rather wait in the waiting room fully clothed, than wait in a gown. The doctors need to read your chart before entering the room, and understand what you are there for, before giving a canned speech.
- I had to drive all the way to Travis AFB to have a [loop electrosurgical excision *procedure (LEEP)* uses a thin, low-voltage electrified wire loop to cut out abnormal tissue in the cervix] done because there is no one local to do it.
- The clinic does not keep up with current gynecology standards, which say women over 30 with 3 normal Pap smears are not required to have annual Pap Smears.
- The door to the exam looked out on the lobby, so I had to be careful that no one would open the door or I was covered when the provider opened the door. Also, the area is not very private and could hear the conversations in the next room, so it doesn't give you a sense that you can truly talk freely.



### **Gynecological Exam Chaperone**

- Having an enlisted member to talk about your sexual history with prior to the procedure is a little inappropriate. The patient should only speak with the person conducting the procedure.
- Keep the Army Specialist out of the room when conducting (sic) the Pap smear and during follow-on discussion with the PA! I have been to the clinic twice for annual exams and both times the specialist was in the room for both the exam and the follow on questions with the PA. Other than that the civilian PA was great and conducted everything in a timely and professional manner. However, having a second person in the room (even though the PA was a female) made it very uncomfortable. I could understand if a male was conducting the exam, but the need for two females to be in the room was not necessary.
- Having private time with the provider. During the entire exam visit the medical assistance was in the room. Prefer to only discuss my private questions with only the provider and not with the medical assistance and the provider.

### **Other Comments**

- Need the option to see a civilian provider of my own choosing.

## **IV. DISCUSSION AND CONCLUSIONS**

### **A. BRIEF OVERVIEW OF STUDY PURPOSE**

Prior studies that have focused on the female civilian and veteran population reveal an association between history of sexual violence (particularly when PTSD was present) and feelings of fear, embarrassment, and distress during the pelvic examination (Weitlauf et al., 2008). The purpose of this study was to extend this knowledge to active duty female U.S. military officers. Very little is known about this population's experience with gynecological care; for example, (1) does the same association occur between a history of sexual violence and negative experiences during recent pelvic examinations that take place in a military setting; (2) are there mediators of history of sexual violence and female officers' reactions to the pelvic examination, such as rank to the pelvic examination; and (3) what is the relationship between history of sexual violence and the recollection of the first pelvic examination. Therefore, the purpose of this study is to address the gaps, with the aim of making recommendations to enhance gynecological care, particularly those who may have difficulty with the pelvic examination. This study attempted to replicate previous work, particularly that of Weitlauf et al. (2008), who focused on female veterans. This study consists of an online survey distributed to the population of active duty female U.S. military officer students attending a military postgraduate school.

First, we summarize results pertaining to the hypotheses, and then provide possible explanations for the results.

### **B. BRIEF OVERVIEW OF MAIN RESULTS**

#### **1. Demographics**

General demographic data on the population including (1) age, (2) branch of service, (3) rank, and (4) race was received from the military postgraduate school. This information was examined to make sure the sample is representative of the active duty female U.S. military student enrolled at the military postgraduate school at the time of the study. To maintain the confidentiality of the participants, demographic information is

characterized by broad groupings (e.g., participants indicated whether they were aged 30 years or younger or 31 years or older). Although the demographics of the respondents and nonrespondent could not be compared directly, analysis suggests that this sample of voluntary participants is representative of the active duty female U.S. military student population at the chosen institution, present at the time of the survey on demographic characteristics—age group, branch of service, rank, time in service, race, marital status, and household income.

The sample was then classified by sexual violence history status. It was found that almost half of the participants reported a history of sexual violence. Other studies of civilian and veteran women also have found relatively high rates of sexual violence (Weitlauf et al., 2008). As discussed in detail below, how sexual violence status was defined could raise concerns about the generalizability of the findings of this study.

Next, Pap smear history (i.e., the number of respondents who had a Pap smear in the prior three years, the number who had a Pap smear in the prior 12 months, the average number of Pap smears in the prior three years, the average age of the first Pap test, the number of respondents who had their first Pap smear test in the military, the number who had an abnormal Pap, and the number with their last pap having been abnormal) by sexual violence history status was examined. With one exception, there was not enough evidence to show a significant difference in Pap smear history between the two groups. The only exception is that the average age at first Pap test is lower in sexual violence group. Thus, these analyses indicate that the sample was representative of the population, and that, for the most part, Pap smear history was similar between those women with a history of sexual violence and those without this history.

**Hypothesis 1:** *Any exposure to sexual violence prior to the most recent pelvic exam predicts negative reactions to most recent exam.*

Results did not support Hypothesis 1. For almost all questions, there are no significant differences in mean intensity of reactions to participants' most recent pelvic examination by sexual violence history status. Surprisingly, women without a history of sexual violence reported a higher level of fear than those with a history of sexual

violence. However, these results are consistent with Weitlauf et al., 2008: when the sample was classified by both sexual violence history and PTSD history, there was no significant difference in distress between those with history of sexual violence but no PTSD and those without either of these histories. It is only women with a history of sexual violence and a history of PTSD that reported a higher rating of distress than the other groups. In addition, Weitlauf et al. (2008) found no significant difference with pain between these groups regardless of sexual violence and/or PTSD status.

**Hypothesis 1a:** *Military rank (in part due to differences in education and age) mediates the relationship between any exposure to sexual violence prior to the most recent pelvic exam and negative reactions to most recent exam, such that reactions will be less negative with increased rank.*

Like Hypothesis 1, Hypothesis 1a was not supported by results. Perhaps the hypothesis was not supported because of methodological reasons. It may be that in order to protect privacy, the rank groupings may have been too broad. Additionally, the number of participants with at least an O-4 ranking was small ( $n = 15$ ).

**Hypothesis 2:** *The first pelvic exam experience predicts the most recent exam reaction.*

Results strongly supported Hypothesis 2. All questions regarding the first pelvic exam were positively correlated with their counterparts regarding the most recent exam. In addition, the first pelvic examination reactions were stronger than the most recent pelvic examination. The women reported experiencing higher levels of fear, embarrassment, distress, and other distress during the women's first pelvic examination than that in the most recent pelvic examination. At a methodological level, the significantly stronger responses to the first pelvic exam indicate that the participants actually read the questions and distinguished between the two experiences. However, the stronger responses to the first pelvic exam questions could be due to an order effect. The trauma questionnaire was completed after the questions regarding the most recent pelvic exam and before the first pelvic exam questions. It is possible that the stronger reactions to the first pelvic examination were triggered by the trauma questions. Although there were no sexual violence group differences on the first pelvic examination, it may be that

the trauma questions triggered the realization that the pelvic examination is a very invasive and personal experience for all women. This idea can be tested in future studies in which the questions regarding first and most recent pelvic exams are counterbalanced.

## **2. Interpretation of Results**

Overall, the results are not consistent with previous work conducted on civilian women and female veterans. There are several possible reasons. These reasons include the definition of sexual violence, the role of PTSD, and homogeneity of the sample. First, the definition of history of sexual violence in this study is broader than that used by previous studies. In this study, sexual violence included any lifetime exposure to uninvited and unwanted sexual attention use of force or the threat of force to have sex against the woman's will, or being sexually assaulted or touched in a sexual way, by a person five or more years older when she was below the age of 13. In contrast, in the Weitlauf et al. (2008) study, sexual violence was defined as "coercive or otherwise nonconsensual sexual intercourse that is either attempted or completed against the women's will" (p. 1346). In other words, this research included sexual attention, whereas the Weitlauf et al. (2008) study focused solely on penetrative assault. Uninvited sexual attention, while a highly negative experience, may not lead to the same levels of trauma as penetrative assault. It is possible that by including uninvited sexual attention in the definition, some women in the sexual violence group only experienced uninvited sexual attention and therefore would not necessarily experience the pelvic examination more strongly than women in the no sexual violence group. Thus, it is possible that differences between the sexual violence groups were masked.

This issue links to the next possible reason for the discrepant results. It may be that women who experience PTSD from sexual violence are most likely to have strong negative experiences with pelvic examinations. Indeed, in the Weitlauf et al. (2008) study, no differences in pelvic examination responses were found between sexual violence groups. However, when women were classified by PTSD status, significant differences emerged (i.e., women with both a history of sexual violence and PTSD had the highest rating of distress associated with the pelvic examination). Due to the highly

sensitive nature of the study topic, and although improving, the continued stigma of having PTSD among active duty military personnel, we decided not to focus on PTSD in this study.

Finally, this sample was more homogenous than those in previous studies in that these women are all officers and military career minded (highly educated, and highly motivated). All of these women were selected to attend the institution and all are working toward graduate degrees. Thus, this sample of women may be highly resilient to trauma. Despite the fact that almost half of the sample reported a history of sexual violence, they reported low levels of negative experiences with the pelvic examination, a highly invasive procedure. Indeed, the healthy soldier effect denotes that military personnel have a decreased risk of mortality compared to the general population (McLaughlin et al., 2008). Therefore, this may be a factor in the results from this sample of women compared to other studies. Replication of this study needs to be conducted in a larger, more diverse sample of active duty U.S. military women (particularly the enlisted population across services).

### **C. PARTICIPANTS' RECOMMENDATIONS**

Although the participants reported, on average, relatively low levels of fear, distress, and anxiety during the pelvic examination, they had a number of recommendations for military women's health care. The general themes reflected in these comments were:

- the competence in the gynecological care provider
  - having a provider specialized in GYN rather than a provider not well educated on miscarriage complications, etc.;
  - preference for an actual physician to perform the procedure instead of a nurse practitioner; and
  - having the provider be more sensitive to the needs of the patient)

- the competence in the gynecological process
  - receiving negative or positive results of pelvic examination via mail rather than hearing “we’ll call you if anything is abnormal”;
  - making a better effort for the examination to be scheduled with the same provider while at the same facility rather than having a different provider for every examination; and
  - helping the patient to be more comfortable by having a more efficient intake process, rather than having the patient wait undressed for extended periods of time
- the need for allotted private time with the provider to allow for sensitive conversations about sexual history rather than having a medical assistant/chaperone (i.e., junior-ranking noncommissioned officer) in the room the entire time.

#### **D. RECOMMENDATIONS FOR FUTURE RESEARCH AND IMPLICATIONS**

Additional research is needed to completely understand the relationship of sexual violence and emotional reactions of fear, embarrassment, distress, and other distress during the pelvic examination. The following recommendations are made. First, it is highly recommended that a study be conducted comprised of participants who are representative of the entire population of the female active duty force (i.e., census of the entire female military population, particularly noncommissioned officers) not just officers at a military postgraduate school. This study should explore how the definition of sexual violence history (i.e., the inclusion/exclusion of unwanted sexual attention) impacts the results.

Second, some female service members have sexual violence histories that predate the first pelvic exam reaction. Therefore, an exploration of the following questions is considered necessary:

- Does sexual violence history adversely affect the first exam?
- Does sexual violence history negatively affect subsequent exams?
- Does sexual violence history affect compliance?
- Does military related first pelvic exams increase likelihood of reaction?

The relationship of these questions to sexual violence history is delineated in Figure 10.

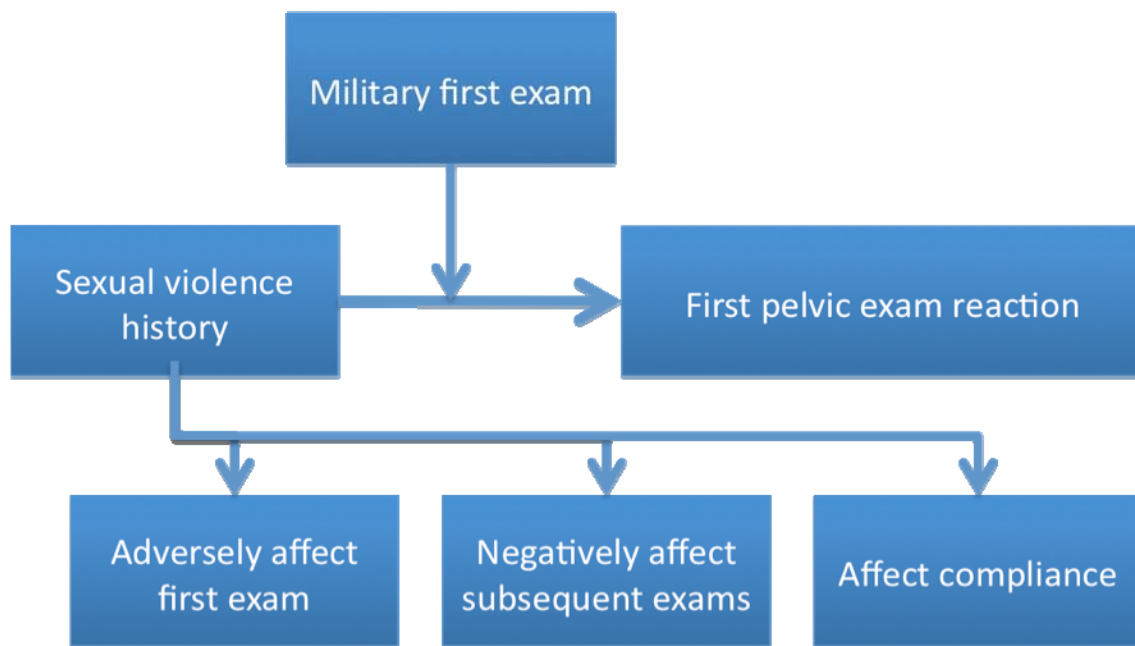


Figure 10. Future Research: Female Service Members have Sexual Violence Histories that Predate the First Pelvic Exam Reaction

A study that entails both a more comprehensive sample of active duty female military personnel and information regarding the questions above would provide a much clearer understanding of the emotional reactions to pelvic examinations and gynecological care in general.

Third, changes to active duty women's health care service, as suggested by the military officers in this study, should be implemented (i.e., (1) an experienced gynecological care provider, (2) competence in gynecological process, and (3) reevaluation of the time during the examination for the need of gynecological exam



chaperone). Two types of results indicate that these changes would improve active duty women's health care service. First, even women without a history of sexual violence express fear and distress during their most recent (military) pap smear. Second, the high volume of recommendations made by the participants also indicates a real need for change.

In conclusion, the results were not consistent with previous studies, possibly due to discrepancies in how sexual violence was defined, the role of PTSD in sexual violence, and sampling differences. However, both the results and participant recommendations point to the need for greater sensitivity by the provider and the military health care setting toward active duty women undergoing this highly personal and invasive procedure.

## APPENDIX. SURVEY: EFFECTS OF EXPOSURE TO TRAUMA ON ACTIVE DUTY FEMALE MILITARY'S REACTION TO GYNECOLOGICAL CARE

### Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

#### About this Survey

**Introduction.** You are invited to participate in a survey of Naval Postgraduate School (NPS) Active Duty Female Military students to help understand the reactions to Gynecology (GYN) care. *This is your opportunity to provide the military with your frank and honest feedback so decisions can be made that will most benefit the active duty female military population.*

**Procedures.** The survey is being conducted via the web. Some questions are asked multiple times to maintain the integrity of the data. You will be asked to answer questions about your experiences with gynecological care and possible traumatic experiences that you may have had. *It should take no more than 10-30 minutes to complete depending on your experiences.*

**Risks.** The potential risks of participating in this study are inadvertent disclosure of individual survey responses. To mitigate this risk, the project has implemented extensive data safeguarding procedures, a copy of which is available from the principle investigator, Dr. Quinn Kennedy. Yet, even with such procedures in place, there always remains some risk, however small, of a data breach.

This survey will include some sensitive questions, if you feel that at any point during or after completing this survey you need to contact a Mental Health provider, below is a list of a few Mental Health Providers that are aware of this study.

Wellness Center (Presidio of Monterey Health Clinic)  
Hours: Mon-Fri (0800-1630)  
(831) 242-4328

Sexual Assault Victim Intervention (SAVI)  
24/7 Response Line  
(831) 760-2329 (dedicated cell phone line)

Military OneSource  
24/7 Private Help  
1(800) 342-9647

Monterey County Rape Crisis Center (MCRCC)  
24 Hour Crisis Hotline  
(831) 375-4357  
(831) 424-4357  
CONFIDENTIAL

**Benefits.** An anticipated benefit from this study is to provide the active duty female military better GYN care.

**Compensation.** No tangible compensation will be given. A copy of the research results will be available at the conclusion of the experiment from, Dr. Quinn Kennedy, 831-656-2618, mqkenned@nps.edu.

**Confidentiality & Privacy Act.** Any information that is obtained during this study will be kept confidential to the full extent permitted by law. All efforts, within reason, will be made to keep your

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

personal information in your research record confidential, but total confidentiality cannot be guaranteed. Your participation in the survey and your responses to the survey will not be disclosed outside of the research team. Survey results will only be reported in the aggregate so that individual responses cannot be determined. However, it is possible that the researcher may be required to divulge information obtained in the course of this research to the subject's chain of command or other legal body.

**Voluntary Nature of the Study.** Participation in this study is strictly voluntary, and if agreement to participation is given, it can be withdrawn at any time without prejudice.

**Points of Contact.** Please contact the principal investigator, Dr. Quinn Kennedy, 831-656-2618, mqkenned@nps.edu. Institutional Review Board (IRB) for the Protection of Human Subjects Chair, CAPT John Schmidt, USN, 831-656-3864, jkschmid@nps.edu.

1. You can decide not to participate at anytime during the course of the survey. If you do not want your information used in the study use the "Prev" button to go back to the beginning of the survey and click "No" to indicate that you do not consent to participating in the survey.

You also have the option to modify your responses to any question at any time by navigating via the "Prev" button to return to the question you would like to change. You also have the option to skip and not answer any question.

Do you consent to participating in the survey?

- ☐ Yes  
☐ No

### Screening Questions (1 of 8)

Please check the appropriate answer for the following question.

1. Are you a civilian (non-military)?

- ☐ Yes  
☐ No

### Screening Questions (2 of 8)

Please check the appropriate answer for the following question.

1. Are you under the age of 18 or over the age of 65?

- ☐ Yes  
☐ No

### Screening Questions (5 of 8)

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

Please check the appropriate answer for the following question.

1. Have you given birth in the last 90 days?

- ☐ Yes  
☐ No

### Screening Questions (6 of 8)

Please check the appropriate answer for the following question.

1. Have you ever been diagnosed with cervical cancer?

- ☐ Yes  
☐ No

### Screening Questions (7 of 8)

Please check the appropriate answer for the following question.

1. Have you had a hysterectomy?

- ☐ Yes  
☐ No

### Screening Questions (8 of 8)

Please check the appropriate answer for the following question.

1. Have you been diagnosed with a terminal illness or other health condition that might prevent you from receiving a Pap smear test?

- ☐ Yes  
☐ No

### Screening Questions (3 of 8)

Please check the appropriate answer for the following question.

1. Are you male?

- ☐ Yes  
☐ No

### Screening Questions (4 of 8)

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

Please check the appropriate answer for the following question.

1. Are you currently pregnant?

- ☐ Yes  
☐ No

### Screening Questions (Exit)

You have answered "Yes" to a **Screening** question. Therefore you are not eligible to participate in the present study.

### Section I: Attitudes and Beliefs about Gynecological Care (1 of 10)

The questions in this section are about Pap smears. Although a Pap smear is done during the pelvic exam (or internal exam), they are different procedures.

A **pelvic exam** is a physical examination where your health care provider will feel for changes in the vagina, uterus, fallopian tubes, ovaries and rectum using a gloved hand. This may include inserting a speculum to open the vagina.

A **Pap smear** (or Pap test) is a procedure often done during the pelvic exam in which cells are scraped from the cervix using a brush, spatula, or cotton-tipped swab.

1. Have you ever had a Pap smear examination?

- ☐ Yes  
☐ No

### Section I: Attitudes and Beliefs about Gynecological Care (2 of 10)

You indicated that you never had a Pap smear examination.

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

1. Are there any particular reasons why you never had a Pap smear? (Check all that apply)

- ☐ Age
- ☐ My doctor never recommended it.
- ☐ Someone told me not to have one.
- ☐ The examination is painful.
- ☐ I didn't know about the examination.
- ☐ The examination is not necessary for me.
- ☐ The examination is not available to me in the clinic I use.
- ☐ The examination is a bother, too inconvenient.
- ☐ The examination causes cancer.
- ☐ To get the examination I would have to go to an unfamiliar place.
- ☐ I cannot get transportation to the clinic to get the examination.
- ☐ I don't know where to get the examination.
- ☐ I have had a hysterectomy.
- ☐ I already have cervical cancer.

### Section I: Attitudes and Beliefs about Gynecological Care (3 of 10)

You indicated that you have had a Pap smear examination.

*Tell us about your recent history of Pap smear examinations:*

1. Have you had a Pap smear in the last 3 years?

- ☐ Yes
- ☐ No

### Section I: Attitudes and Beliefs about Gynecological Care (4 of 10)

You indicated that you have had a Pap smear in the last 3 years.

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

1. How many pap smears have you had in the last 3 years?

- ☐ 1 Pap
- ☐ 2 Paps
- ☐ 3 Paps
- ☐ 4 or more Paps

2. Have you had a Pap smear examination in the past 12 months?

- ☐ Yes
- ☐ No

### Section I: Attitudes and Beliefs about Gynecological Care (5 of 10)

1. Have you ever had an abnormal Pap result?

- ☐ Yes
- ☐ No
- ☐ Don't know

### Section I: Attitudes and Beliefs about Gynecological Care (6 of 10)

You indicated that you have had an abnormal Pap result.

1. Was your last Pap result abnormal?

- ☐ Yes
- ☐ No
- ☐ Don't know

### Section I: Attitudes and Beliefs about Gynecological Care (7 of 10)

1. Where did you have your last Pap smear exam completed?

- ☐ Presidio of Monterey US Army Health Clinic (POMAHC)
- ☐ Deployed
- ☐ Private Doctor / Clinic (non-Military care)

Other Military or non-Military Setting (Please indicated type of Setting)

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

2. When was your last scheduled Pap smear examination appointment?

Date (MM/YYYY)

3. Did you attend your last scheduled Pap smear examination?

☐ Yes

☐ No

### Section I: Attitudes and Beliefs about Gynecological Care (8 of 10)

1. You indicated that you did not attend your last scheduled Pap smear examination appointment.

Choose the description below that best describes you.

☐ I canceled and rescheduled the appointment.

☐ I missed the appointment.

2. Briefly tell us why you either canceled and rescheduled or missed your last scheduled Pap Smear examination appointment.

### Section I: Attitudes and Beliefs about Gynecological Care (9 of 10)

1. How old were you at your last scheduled Pap smear examination?

Age

### Section I: Attitudes and Beliefs about Gynecological Care (10 of 10)



## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

1. You answered that you have not had a Pap smear in the past 12 months, please tell us the reason.

(Select the ONE answer that best describes why you have not had a Pap smear in the past 12 months).

- ☐ No reason / Never thought about it
- ☐ Didn't need one / Didn't know I needed one
- ☐ Doctor didn't order it / Didn't say I needed it
- ☐ Haven't had any problems
- ☐ Put it off / Didn't get around to it
- ☐ Had hysterectomy
- ☐ Don't have a doctor
- ☐ I don't want to answer this question
- ☐ I don't know

### Section II: Reactions to the most recent Pap smear / pelvic examination (1 ...

Women may experience Pap smears differently. We want to know about your feelings about Pap smears and gynecological care.

For each question, please check the description that best describe your feelings during your **MOST RECENT EXAMINATION**.

1. How frightened were you by having a Pap smear examination?

- |  |  |  |  |  |
|--|--|--|--|--|
| <input type="radio"/> Not at All<br>Frightened | <input type="radio"/> Mildly<br>Frightened | <input type="radio"/> Somewhat<br>Frightened | <input type="radio"/> Moderately<br>Frightened | <input type="radio"/> Very<br>Frightened |
|--|--|--|--|--|

2. How embarrassed were you by having a Pap smear examination?

- |   |   |   |   |   |
|---|---|---|---|---|
| <input type="radio"/> Not at All<br>Embarrassed | <input type="radio"/> Mildly<br>Embarrassed | <input type="radio"/> Somewhat<br>Embarrassed | <input type="radio"/> Moderately<br>Embarrassed | <input type="radio"/> Very<br>Embarrassed |
|---|---|---|---|---|

### Section II: Reactions to the most recent Pap smear / pelvic examination (2 ...

Women may experience Pap smears differently. We want to know about your feelings about Pap smears and gynecological care.

For each question, please check the number (0 to 10) that best describe your feelings during your **MOST RECENT EXAMINATION**.

0 being No Discomfort / Anxiety at All  
10 being Extreme Discomfort / Anxiety

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

1. What was the level of discomfort you experienced when your doctor inserted the speculum into your vagina?

Please select the number for your level of discomfort.

☐ 0    ☐ 1    ☐ 2    ☐ 3    ☐ 4    ☐ 5    ☐ 6    ☐ 7    ☐ 8    ☐ 9    ☐ 10  
 No                                      Mild                                      Moderate                                      Extreme  
 Discomfort                                      Discomfort                                      Discomfort                                      Discomfort  
 at All

2. What was the level of anxiety you experienced with each of these activities of the exam?

Please select the number for your level of anxiety.

Disrobing (taking off my clothes)

☐ 0    ☐ 1    ☐ 2    ☐ 3    ☐ 4    ☐ 5    ☐ 6    ☐ 7    ☐ 8    ☐ 9    ☐ 10  
 No                                      Mild                                      Moderate                                      Extreme  
 Anxiety                                      Anxiety                                      Anxiety                                      Anxiety  
 at All

3. Getting weighed

☐ 0    ☐ 1    ☐ 2    ☐ 3    ☐ 4    ☐ 5    ☐ 6    ☐ 7    ☐ 8    ☐ 9    ☐ 10  
 No                                      Mild                                      Moderate                                      Extreme  
 Anxiety                                      Anxiety                                      Anxiety                                      Anxiety  
 at All

4. Having my blood pressure taken

☐ 0    ☐ 1    ☐ 2    ☐ 3    ☐ 4    ☐ 5    ☐ 6    ☐ 7    ☐ 8    ☐ 9    ☐ 10  
 No                                      Mild                                      Moderate                                      Extreme  
 Anxiety                                      Anxiety                                      Anxiety                                      Anxiety  
 at All

5. Lying on the exam table with my feet in the stirrups

☐ 0    ☐ 1    ☐ 2    ☐ 3    ☐ 4    ☐ 5    ☐ 6    ☐ 7    ☐ 8    ☐ 9    ☐ 10  
 No                                      Mild                                      Moderate                                      Extreme  
 Anxiety                                      Anxiety                                      Anxiety                                      Anxiety  
 at All

6. Inserting the speculum into vagina

☐ 0    ☐ 1    ☐ 2    ☐ 3    ☐ 4    ☐ 5    ☐ 6    ☐ 7    ☐ 8    ☐ 9    ☐ 10  
 No                                      Mild                                      Moderate                                      Extreme  
 Anxiety                                      Anxiety                                      Anxiety                                      Anxiety  
 at All

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

7. Manual pelvic examination (doctor examining vagina, uterus, ovaries, and rectum with gloved hands)

- ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7   ☐ 8   ☐ 9   ☐ 10
- No   Mild   Moderate   Extreme
- Anxiety   Anxiety   Anxiety   Anxiety
- at All

8. Discussing my health history / concerns with my doctor

- ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7   ☐ 8   ☐ 9   ☐ 10
- No   Mild   Moderate   Extreme
- Anxiety   Anxiety   Anxiety   Anxiety
- at All

### Section III: Trauma Questionnaire (1 of 8)

Some women experience traumatic events during their lives. We are trying to find out about these events and how they affect women's lives.

1. Have you ever been involved in a major accident or disaster?

- ☐ Yes
- ☐ No
- ☐ Don't know

### Section III: Trauma Questionnaire (1 of 8) Part (1 of 4)

You indicated that you were involved in a major accident or disaster.

1. When were you involved in the major accident or disaster?

- ☐ Prior to the military service
- ☐ During military service
- ☐ Both Prior to and During military service

### Section III: Trauma Questionnaire (1 of 8) Part (2 of 4)

1. How old were you when you were involved in the major accident or disaster prior to the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (1 of 8) Part (3 of 4)

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

1. How old were you when you were involved in the major accident or disaster during military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (1 of 8) Part (4 of 4)

1. How old were you when you were involved in the major accident or disaster prior to and during the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (2 of 8)

Some women experience **traumatic events** during their lives. We are trying to find out about these events and how they affect women's lives.

1. Have you ever been physically assaulted or a victim of a violent crime?

- ☐ Yes  
☐ No  
☐ Don't know

### Section III: Trauma Questionnaire (2 of 8) Part (1 of 4)

You indicated that you were physically assaulted or a victim of a violent crime.

1. When were you involved in the physically assault or a victim of a violent crime?

- ☐ Prior to the military service  
☐ During military service  
☐ Both Prior to and During military service

### Section III: Trauma Questionnaire (2 of 8) Part (2 of 4)

1. How old were you when you were involved in the physically assaulted or a victim of a violent crime prior to the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (2 of 8) Part (3 of 4)

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

1. How old were you when you were involved in the physically assaulted or a victim of a violent crime during military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (2 of 8) Part (4 of 4)

1. How old were you when you were involved in the physically assaulted or a victim of a violent crime prior to and during the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (3 of 8)

Some women experience traumatic events during their lives. We are trying to find out about these events and how they affect women's lives.

1. At any time, has a spouse or partner (significant other) ever threatened to physically hurt you in any way?

- ☐ Yes
- ☐ No
- ☐ Don't know

### Section III: Trauma Questionnaire (3 of 8) Part (1 of 4)

You indicated that you had a spouse or partner (significant other) that threatened to physically hurt you in any way.

1. When did your spouse or partner (significant other) threaten to physically hurt you in any way?

- ☐ Prior to the military service
- ☐ During military service
- ☐ Both Prior to and During military service

### Section III: Trauma Questionnaire (3 of 8) Part (2 of 4)

1. How old were you when your spouse or partner (significant other) ever threatened to physically hurt you in any way prior to the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

### Section III: Trauma Questionnaire (3 of 8) Part (3 of 4)

1. How old were you when your spouse or partner (significant other) ever threatened to physically hurt you in any way during military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (3 of 8) Part (4 of 4)

1. How old were you when your spouse or partner (significant other) ever threatened to physically hurt you in any way prior to and during the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (4 of 8)

Some women experience traumatic events during their lives. We are trying to find out about these events and how they affect women's lives.

1. At any time has a spouse or partner (significant other) ever hit you, kicked you or physically hurt you in any way?

☐ Yes

☐ No

☐ Don't know

### Section III: Trauma Questionnaire (4 of 8) Part (1 of 4)

You indicated that you had a spouse or partner (significant other) hit you, kick you or physically hurt you in any way.

1. When did your spouse or partner (significant other) hit you, kicked you or physically hurt you in any way?

☐ Prior to the military service

☐ During military service

☐ Both Prior to and During military service

### Section III: Trauma Questionnaire (4 of 8) Part (2 of 4)

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

1. How old were you when your spouse or partner (significant other) hit you, kicked you or physically hurt you in any way prior to the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (4 of 8) Part (3 of 4)

1. How old were you when your spouse or partner (significant other) hit you, kicked you or physically hurt you in any way during military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (4 of 8) Part (4 of 4)

1. How old were you when your spouse or partner (significant other) hit you, kicked you or physically hurt you in any way prior to and during the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (5 of 8)

Some women experience traumatic events during their lives. We are trying to find out about these events and how they affect women's lives.

1. Have you ever received uninvited and unwanted sexual attention (e.g., touching or cornering, pressure for sexual favors)?

☐ Yes

☐ No

☐ Don't know

### Section III: Trauma Questionnaire (5 of 8) Part (1 of 4)

You indicated that you received uninvited and unwanted sexual attention (e.g., touching or cornering, pressure for sexual favors).

1. When did you received uninvited and unwanted sexual attention (e.g., touching or cornering, pressure for sexual favors)?

☐ Prior to the military service

☐ During military service

☐ Both Prior to and During military service

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

### Section III: Trauma Questionnaire (5 of 8) Part (2 of 4)

1. How old were you when you received uninvited and unwanted sexual attention (e.g., touching or cornering, pressure for sexual favors) prior to the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (5 of 8) Part (3 of 4)

1. How old were you received uninvited and unwanted sexual attention (e.g., touching or cornering, pressure for sexual favors) during military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (5 of 8) Part (4 of 4)

1. How old were you received uninvited and unwanted sexual attention (e.g., touching or cornering, pressure for sexual favors) prior to and during the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (6 of 8)

Some women experience **traumatic events** during their lives. We are trying to find out about these events and how they affect women's lives.

1. Has anyone ever used force or the threat of force to have sex with you against your will?

- ☐ Yes
- ☐ No
- ☐ Don't know

### Section III: Trauma Questionnaire (6 of 8) Part (1 of 4)

You indicated that someone used force or threatened the use of force to have sex with you against your will?



## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

1. When did you someone use force or threatened the use of force to have sex with you against your will?

- ☐ Prior to the military service
- ☐ During military service
- ☐ Both Prior to and During military service

### Section III: Trauma Questionnaire (6 of 8) Part (2 of 4)

1. How old were you when that someone used force or threatened the use of force to have sex with you against your will prior to the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (6 of 8) Part (3 of 4)

1. How old were you when that someone used force or threatened the use of force to have sex with you against your will during military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (6 of 8) Part (4 of 4)

1. How old were you when that someone used force or threatened the use of force to have sex with you against your will prior to and during the military service?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section III: Trauma Questionnaire (7 of 8)

Some women experience traumatic events during their lives. We are trying to find out about these events and how they affect women's lives.

1. Were you ever sexually assaulted or touched in a sexual way, by a person 5 or more years older than you when you were below the age of 13?

- ☐ Yes
- ☐ No
- ☐ Don't know

### Section III: Trauma Questionnaire (8 of 8)

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

Some women experience traumatic events during their lives. We are trying to find out about these events and how they affect women's lives.

1. Have you ever experienced combat related trauma (i.e., I.E.D., explosion, convoy attack)?

- ☐ Yes  
☐ No  
☐ Don't know

### Section III: Trauma Questionnaire (8 of 8)

1. How old were you when you experienced combat related trauma?

Age at each event (e.g., for one event "35" or for multiple events "12, 20, 25").

### Section IV: Reaction to the First Pap smear / Pelvic Examinations

Women's first experience with a Pap smear examination is an important element of their health care. We want to know what you remember about your first examination. Take a few moments to recall your very first examination that involved a Pap smear, and respond accordingly to the questions provided below.

*We realize it may be difficult to remember this information but it's important that you answer each question to the best of your memory / knowledge.*

1. How old were you during your first Pap smear examination?

- ☐ Do not remember

Age

2. What was the reason for your first examination?

- ☐ Birth Control  
☐ Infection or other gynecological problem  
☐ Pregnancy  
☐ Post sexual assault  
☐ Routine screening  
☐ Do not remember

Other:

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

3. Where was the examination conducted?

- ☐ Do not remember
- ☐ Civilian sector - private clinic
- ☐ Civilian sector - School / College
- ☐ Military - Basic Training
- ☐ Military - Stateside Clinic
- ☐ Military - Deployed
- ☐ Other Military or Civilian location:

4. During your first Pap smear, how frightened were you by having a Pap smear examination?

- ☐ Not Frightened at all
- ☐ Mildly Frightened
- ☐ Somewhat Frightened
- ☐ Moderately Frightened
- ☐ Very Frightened
- ☐ Do not remember

5. During your first Pap test, how embarrassed were you by having a Pap smear examination?

- ☐ Not Embarrassed at all
- ☐ Mildly Embarrassed
- ☐ Somewhat Embarrassed
- ☐ Moderately Embarrassed
- ☐ Very Embarrassed
- ☐ Do not remember

6. During your first Pap test, what was the level of discomfort you experienced when your doctor inserted the speculum into your vagina? Please select the number for your level of discomfort.

- ☐ 0 No Discomfort at All
- ☐ 1
- ☐ 2
- ☐ 3 Mild Discomfort
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 Moderate Discomfort
- ☐ 8
- ☐ 9
- ☐ 10 Extreme Discomfort

7. During your first Pap test, what was the level of anxiety you experienced with each of these activities of the exam? Please select the number for your level of anxiety. Disrobing (taking off my clothes)

- ☐ 0 Not at All Anxious
- ☐ 1
- ☐ 2
- ☐ 3 Mildly Anxious
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 Moderately Anxious
- ☐ 8
- ☐ 9
- ☐ 10 Extremely Anxious
- ☐ 11

8. Getting weighed

- ☐ 0 Not at All Anxious
- ☐ 1
- ☐ 2
- ☐ 3 Mildly Anxious
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 Moderately Anxious
- ☐ 8
- ☐ 9
- ☐ 10 Extremely Anxious
- ☐ 11

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

9. Having my blood pressure taken

☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7   ☐ 8   ☐ 9   ☐ 10   ☐ 11

Not at all   Mildly Anxious   Moderately Anxious   Extremely Anxious   re

10. Lying on the exam table with my feet in the stirrups

☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7   ☐ 8   ☐ 9   ☐ 10   ☐ 11

Not at all   Mildly Anxious   Moderately Anxious   Extremely Anxious   re

11. Manual pelvic examination (doctor examining vagina, uterus, ovaries, and rectum with gloved hands)

☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7   ☐ 8   ☐ 9   ☐ 10   ☐ 11

Not at all   Mildly Anxious   Moderately Anxious   Extremely Anxious   re

12. Discussing my health history / concerns with my doctor

☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7   ☐ 8   ☐ 9   ☐ 10   ☐ 11

Not at all   Mildly Anxious   Moderately Anxious   Extremely Anxious   re

### Section V: Recommendations to Improve Active Duty Female Military GYN exper...

Please tell us about ways in which the military might improve the sensitivity of gynecological care to women service members.

1. Have you ever received gynecological care (e.g., a Pap smear) "while deployed"?

☐ Yes  
☐ No

### Section V: Recommendations to Improve Active Duty Female Military GYN exper...

You indicated that you received gynecological care (e.g., Pap smear) "while deployed".

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

1. Where did you receive the gynecological care "while deployed"?

- ☐ Ship
- ☐ Combat Zone
- ☐ Forward Deployed medical facility

Other medical care facility (describe type of facility)

2. Do you have any suggestions for improving gynecological care "while deployed" for female service members?

### Section V: Recommendations to Improve Active Duty Female Military GYN exper...

1. Have you been seen for women's health care at Presidio of Monterey Health Clinic?

- ☐ Yes
- ☐ No

### Section V: Recommendations to Improve Active Duty Female Military GYN exper...

You indicated that you have been seen for women's health care at Presidio of Monterey Health Clinic.

1. How satisfied are you with your women's health care at Presidio of Monterey Health Clinic?

- ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10
- Not at All Mildly Moderately Extremely
- Satisfied Satisfied Satisfied Satisfied

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

2. What suggestions do you have for improving women's health care (e.g., provision of gynecological screening like Pap smears) at Presidio of Monterey Health Clinic? (check all that apply, add your own comments at the end).

☐ Need more female clinicians

☐ Need more time allotted for examinations

☐ Need option to see consistent provider from year to year

☐ Need more women focused settings (e.g., better gowns, more options for draping and coverage, more educational resources for women service members)

Other (please specify)

### Section VI: Background Information

Finally, we would like to ask some questions describing who you are.

1. What age range are you in?

☐ 30 or Under

☐ 31 or Older

2. In which branch of the Military do you serve?

☐ Army

☐ Navy

☐ Air Force

☐ Marines

3. What is your rank?

☐ O-1 to O-3

☐ O-4 to O-10

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

4. What is your time in service?

- ☐ 0-4 years
- ☐ 5-9 years
- ☐ 10-14 years
- ☐ 15-19 years
- ☐ 20 or more years

5. What is your race? (Select all that apply)

- ☐ Caucasian
- ☐ African American
- ☐ American Indian / Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ Hispanic or Latina
- ☐ Other

6. What is your current marital status?

- ☐ Single
- ☐ Separated
- ☐ Married / Living with domestic partner
- ☐ Divorced
- ☐ Widowed

7. Which of the following categories best represents the combined income for all family members in your household before taxes?

- ☐ \$74,999 or less
- ☐ \$75,000 - \$149,999
- ☐ \$150,000 - \$224,999
- ☐ \$225,000 or more

### Mental Health Resources

If you feel that at anytime you need to contact a Mental Health provider, below is a list of a few Mental Health Providers that are aware of this study.

## Effects of Exposure to Trauma on Active Duty Female Military's Reaction to

**Wellness Center** (Presidio of Monterey Health Clinic)  
Hours: Mon-Fri (0800-1630)  
(831) 242-4328

**Sexual Assault Victim Intervention (SAVI)**  
24/7 Response Line  
(831) 760-2329 (dedicated cell phone line)

**Military OneSource**  
24/7 Private Help  
1(800) 342-9647

**Monterey County Rape Crisis Center (MCRCC)**  
24 Hour Crisis Hotline  
(831) 375-4357  
(831) 424-4357  
CONFIDENTIAL

Thank you for your time.



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